

Quarterly

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Preventing childhood eating disorders

OVERVIEW

What influences the development of eating disorders?

REVIEW

How well do prevention programs work?





About the Quarterly

We summarize the best available research evidence on a variety of children's mental health topics, using systematic review and synthesis methods adapted from the *Cochrane Collaboration*. We aim to connect research and policy to improve children's mental health. The BC Ministry of Children and Family Development funds the *Quarterly*.

About the Children's Health Policy Centre

We are an interdisciplinary research group in the Faculty of Health Sciences at Simon Fraser University. We focus on improving social and emotional well-being for all children, and on the public policies needed to reach these goals.

To learn more about our work, please see childhealthpolicy.ca.

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When implementing prevention programs, policy-makers and practitioners are often guided by information on modifiable risk and protective factors. We summarize studies on these factors for childhood eating disorders.

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Prevention is a crucial component of any public mental health strategy — to reduce avoidable disorders and interruptions to healthy child development. Given the importance of preventing childhood eating disorders, we conducted a systematic review to identify the most effective programs.

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Treating childhood eating disorders

Eating disorders cause serious distress and symptoms, so children with these conditions need rapid access to effective treatments. We conduct a systematic review to inform practitioners and policy-makers of the latest research on these treatments.

How to Cite the Quarterly

We encourage you to share the *Quarterly* with others and we welcome its use as a reference (for example, in preparing educational materials for parents or community groups). Please cite this issue as follows:

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We celebrate the Indigenous Peoples whose traditional lands
Quarterly team members live and work on.

What influences the development of eating disorders?

Mental health conditions that involve difficulties with eating patterns — such as anorexia nervosa, bulimia nervosa and binge-eating disorder — cause considerable distress for young people and their families. (The *Diagnostic and Statistical Manual of Mental Disorders* also recognizes avoidant/restrictive food intake disorder.¹ See sidebar for more information on this condition.) Eating disorders also affect many young people. Recent estimates suggest that 0.2% of 12- to 18-year-olds — or approximately 700 youth in BC — may have these disorders at any given time.²⁻³

A systematic review highlights how devastating eating disorders can be. Examining the experiences of more than 17,000 teens and young adults, researchers found that those with anorexia had more than five times the expected mortality rate, and those with bulimia had nearly two times the expected rate.⁴ A study that



Effective prevention efforts can stop the development of eating disorders.

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Recognizing avoidant/restrictive food intake disorder

Avoidant/restrictive food intake disorder occurs when a young person's eating becomes very problematic, for example, due to a lack of interest in food or eating, avoidance of food based on its sensory characteristics or concerns about negative consequences of eating.¹ To meet diagnostic criteria, restrictions must also result in the child not meeting their energy and nutritional needs.¹ We were unable to identify any research on modifiable risk and protective factors for avoidant/restrictive food intake disorder that met our inclusion criterion.

included 15- to 19-year-olds who received care for eating disorders in a hospital in Ontario similarly found mortality rates five times higher than in the general population.⁵

Preventing eating disorders is therefore crucial, and childhood is the optimal time to intervene. As a starting point in developing effective prevention programs, it is key to understand modifiable risk and protective factors. We consequently looked for rigorous observational studies identifying these factors for childhood eating disorders. In particular, we sought studies that followed large groups of children (1,000 or more) over time to confirm that risk factors preceded diagnoses. We also required studies to use samples that were generally reflective of the population.

The disorder rate for fussy eaters was 3% compared with 1% for participants overall.

Early eating patterns

The Avon Longitudinal Study has followed a large group of English children from birth to identify risk factors for eating disorders. Among the nearly 4,800 young people assessed to age 16, several eating patterns were associated with increased risk.⁶ Those who were “fussy eaters” throughout childhood — defined as being choosy about foods, refusing food and having general feeding difficulties —

were more likely to develop anorexia. The disorder rate for fussy eaters was 3% compared with 1% for participants overall. As well, for girls only, those who persistently under-ate throughout childhood were more likely to develop anorexia, with disorder risk being 6% higher for this group compared with other children. And for binge-eating disorder, for both boys and girls, researchers found significantly greater risk for those with low levels of overeating before age five but increasing levels after that. The binge-eating disorder rate was 2% for these children compared with 1% for participants overall.⁶

High levels of worry, including about the future and past behaviours, predicted anorexia by age 16.

Early body mass index

The Avon study also examined links between body mass index (BMI) and eating disorders by age 18.⁷ Youth who developed anorexia had significantly lower BMIs in early childhood, beginning at ages two for boys and four for girls, compared with those without eating disorders. In contrast, girls who developed bulimia, but not boys, had significantly higher BMIs beginning at age two and continuing over time. Both boys and girls who developed binge-eating disorder also had higher BMIs beginning in early childhood. Differences in

BMI between those with and without eating disorders also increased over time across both disorders.⁷ There is nevertheless growing recognition of the limitations of using BMI to predict health outcomes, particularly at the level of individuals versus populations.⁸

Anxieties in middle childhood

As well as early eating patterns and BMI, the Avon study examined links between anxiety at age 10 and eating disorders at ages 14 and 16.⁹ High levels of worry, including about the future and past behaviours, predicted anorexia by age 16. High levels of physical anxiety symptoms at age 10, such as being tense and having worries that interfered with sleep, predicted bulimia (or subthreshold bulimia) at ages 14 or 16.⁹

Body dissatisfaction

Researchers have also examined potential links between body dissatisfaction and eating disorders. An Australian study followed nearly 1,400 children from birth to age 20, evaluating young people's concerns about weight and shape as well as parents' perceptions of their child's weight.¹⁰ This study found that two factors *together* predicted bulimia and binge-eating disorder by age 20: when parents perceived their child as being overweight at age 10, and when children had high levels of concern about eating, weight and shape at age 14.¹⁰

Likewise, a different study that tracked more than 1,300 Australian high-school students over one year found that dissatisfaction with shape or weight was a significant predictor for later eating disorders (including both full-criteria and subthreshold levels).¹¹ As well, a study of more than 1,700 Spanish high-school students found that those with high levels of body dissatisfaction at age 13 had a three times higher risk of developing eating disorders at age 15.¹² Another Australian study assessed nearly 2,000 high-school students over three years and found that teen girls who dieted at a severe level were 18 times more likely to develop anorexia or bulimia (both partial- or full-criteria) than those who did not diet, while teen girls who dieted at a moderate level were five times more likely to develop those disorders.¹³

Beyond identifying risks, researchers have also assessed factors that can protect young people from developing disordered eating.

The positive role of parents

Beyond identifying risks, researchers have also assessed factors that can protect young people from developing disordered eating. One such study examined the experiences of more than 13,000 American adolescents over

a six-year period.¹⁴ Researchers measured positive connections with parents, including feelings of closeness and relationship satisfaction, as well as disordered eating, including fasting or skipping meals, compensatory behaviours (i.e., vomiting or taking laxatives, diuretics or weight-loss pills) and binge eating. Among teenage girls, but not boys, greater parental connectedness — with both mothers and fathers — was associated with lower odds of disordered eating in young adulthood.¹⁴

Reducing risks, supporting strengths

Additional factors likely play a role in the development of eating disorders — and may not be well captured in the existing studies. For example, a systematic review that included both youth and adults found that experiencing maltreatment as a child was significantly associated with a higher prevalence of eating disorders.¹⁵ However, because many included studies relied on retrospective recall of childhood experiences, further research is needed to determine causal relationships. Ongoing efforts to prevent child maltreatment nevertheless remain crucial.

Not all risk and protective factors lend themselves to prevention programming. However, for eating disorders, knowledge about precursors such as body dissatisfaction has indeed informed the development of prevention programs. In the [Review article](#) that follows, we present systematic review findings on eating disorder prevention programs for young people. 🙌

For eating disorders, knowledge about precursors such as body dissatisfaction has informed the development of prevention programs.



Parents play an important role in supporting children to have a healthy relationship with food.

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How well do prevention programs work?

Given the many challenges that eating disorders cause for young people, preventing these conditions is a crucial goal. And to meet this goal, practitioners and policy-makers need to know which prevention interventions are effective. To provide current information, we therefore conducted a systematic review of eating disorder prevention program evaluations.

We accepted three randomized controlled trials (RCTs) evaluating two unique programs: an Education Program¹⁶ and the Dissonance Program,¹⁷⁻¹⁸ which is currently named the Virtually Delivered Body Project.¹⁹⁻²⁰ All three studies met our typical inclusion criteria (detailed in the Methods). As well, all three involved diagnostic interviews to determine how well programs reduced eating disorder incidence (or the number of new cases) — but for girls only.^{16-17, 19} The Education Program was delivered universally regardless of risk, while Dissonance and the Body Project were delivered to girls at risk due to body image concerns.^{16-17, 19}

Reaching out to all girls

The RCT evaluating the Education Program included 16- to 18-year-old girls attending an Italian high school.¹⁶ Program content encompassed body image, pressures to be thin, concerns with dieting and the development of eating disorders. The approach involved lectures, group discussions and writing assignments.

Challenging the thin ideal

The thin ideal is the belief that slimness is the optimal standard of beauty for females.²¹ Among girls and young women, exposure to this standard is widespread, including on social media,²²⁻²³ and many individuals have expressed concerns about the impact of this exposure. In particular, internalizing the thin ideal likely produces body dissatisfaction by emphasizing the importance of appearance for girls and women, while also depicting an ideal that is often impossible (and unhealthy) to achieve.²⁴⁻²⁵ Compounding these concerns, internalizing the thin ideal has been linked to disordered eating,²⁶⁻²⁷ and to predicting relapse for those recovering from eating disorders.²⁸ Meanwhile, decreasing the thin ideal is associated with reducing eating disorder symptoms.²⁴ For these reasons, measuring participants' belief in the thin ideal is often used to assess how well prevention programs work, as the evaluations in this issue exemplify.



When teens feel positively connected to a parent, the risk for eating disorders can be reduced.

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Girls were also taught skills to address media emphasis on thinness. Teachers delivered the program during six weekly two-hour sessions. Teens and their parents also participated in separate question-and-answer sessions with practitioners. Girls randomized to the control condition participated in their regular academic program.¹⁶

Reaching girls with body image concerns

The RCT evaluating Dissonance included 14- to 19-year-old American girls with self-identified body image concerns.¹⁷ Program content covered defining the thin ideal, identifying the costs of pursuing it, and learning effective ways to challenge it using discussions, role plays and homework assignments. (The sidebar provides more information on the thin ideal and the importance of

confronting it.) Participants also identified positive personal qualities and practised challenging pressures to conform to the thin ideal. School nurses or counsellors led the four weekly one-hour sessions. Participants randomized to the control condition received an educational brochure.¹⁷

The RCT evaluating the Body Project (current name for the Dissonance program) included 15- to 20-year-old Swedish girls and young women with self-identified body dissatisfaction.¹⁹ The standard program was adapted to fit the Swedish cultural context.¹⁹⁻²⁰ As well, rather than school personnel, undergraduate students delivered the program. In this evaluation, the program was delivered virtually so that those who missed sessions could watch recorded versions. Those randomized to the control condition participated in an expressive writing group that involved detailing thoughts, images and emotions about their bodies for 40 minutes weekly over four weeks.¹⁹ Table 1 summarizes the programs and their evaluations.

Table 1. Prevention Programs and Study Descriptions			
Intervention	Approaches + goals	Sample size	Child ages (country)
Universal			
Education Program ¹⁶	Teen girls learned about body image, pressures to be thin + concerns with dieting and gained skills to address media's emphasis on thinness during 6 weekly sessions. Teens + their parents also participated in separate question + answer sessions following the program	141	16–18 years (Italy)
Targeted			
Dissonance ¹⁷⁻¹⁸	Teen girls learned about the thin ideal, including the costs of pursuing it + how to challenge it, during 4 weekly sessions	306	14–19 years (United States)
Virtually Delivered Body Project ¹⁹	As above	297*	15–20 years (Sweden)
* Excludes participants randomized to waitlist control group who received intervention prior to final follow-up.			

How well did the universal program work?

The Education Program successfully prevented new cases of bulimia at 10-month follow-up.¹⁶ Specifically, no new cases of bulimia were found for program participants, compared with three new cases in the control group. (No new cases of anorexia were found at 10-month follow-up for either the intervention or control groups.)¹⁶

Also at 10-month follow-up, among teen girls who did not restrict their food intake before the study, significantly fewer program participants began excessive dieting (i.e., consuming less than 1,000 calories a day), compared with the control group.¹⁶ Specifically, excessive dieting was found for only 2.9% of program participants compared with 12.2% in the control group. As well, for those whose self-esteem was not unduly influenced by body shape or weight before the study, significantly fewer intervention participants developed this concern compared with the control group. However, researchers found no significant differences for problematic eating behaviours and attitudes, or for other unhealthy weight control methods (i.e., fasting, self-induced vomiting, and using laxatives or diuretics).¹⁶

Both successful programs addressed an established risk factor for the development of eating disorders in teen girls – body dissatisfaction.

How well did the targeted program work?

The Dissonance program did not prevent the onset of anorexia, bulimia or binge-eating disorder at three-year follow-up.¹⁸ Although only 0.8% of teen girls who participated in the program developed one of these disorders, compared with 3.0% in the control group, the difference did not reach statistical significance. That

said, Dissonance did significantly reduce eating disorder symptoms at three-year follow-up, with a small effect size (Cohen's *d* = 0.30). But for all other outcomes — including dieting, body dissatisfaction, internalizing of the thin ideal and psychosocial functioning — differences did not reach statistical significance at three-year follow-up. Girls in the Dissonance program did have significantly lower body dissatisfaction at both one- and two-year follow-up, and less dieting at one-year but not final follow-up.^{17–18}

The Body Project successfully prevented the onset of eating disorders, including threshold and subthreshold cases of anorexia, bulimia, binge-eating disorder and/or other eating disorders.¹⁹ Specifically, over the two-year follow-up, only 2.0% of Body Project participants developed an eating disorder (i.e., bulimia and/or binge-eating disorder) compared with 8.8% in the expressive writing group (who developed bulimia, subthreshold bulimia, binge-eating disorder as well as purging disorder). In other words, the Body Project led to a 77% lower incidence of eating disorder diagnoses compared with expressive writing.¹⁹

The Body Project produced other positive outcomes.¹⁹ At two-year follow-up, compared with expressive writing, the program led to these significant benefits: less restricting food to change weight or shape; less internalizing of the thin ideal; lower eating disorder symptoms scores, based on interview ratings, but not by self-report; and less dissatisfaction with body shape, but not body parts. But no group difference was found regarding the impact of eating disorder symptoms on daily functioning at two-year follow-up. The Body Project did produce some positive benefits at earlier time points as well. For example, participants reported fewer eating disorder symptoms and less body part dissatisfaction at six-month follow-up.¹⁹ Table 2 summarizes the outcomes for all three evaluations.

Expanding efforts to prevent eating disorders is a crucial way to reduce the number of young people experiencing these conditions.

Table 2. Prevention Program Outcomes		
Intervention	Follow-up	Outcomes
Universal		
Education Program ¹⁶	10 months	<ul style="list-style-type: none"> ↓ New bulimia cases ↓ Excessive dieting * NS Unhealthy weight control methods † ↓ Influence of body weight/shape on self-esteem NS Problematic eating behaviours + attitudes
Targeted		
Dissonance ^{17–18}	3 years	<ul style="list-style-type: none"> NS New anorexia, bulimia and/or binge-eating disorder cases ↓ Eating disorder symptoms NS Dieting NS Body dissatisfaction NS Internalizing of the thin ideal NS Psychosocial functioning
Virtually Delivered Body Project ¹⁹	2 years	<ul style="list-style-type: none"> ↓ New anorexia, bulimia, binge-eating disorder and/or other eating disorder cases (full or subthreshold) ↓ Eating disorder symptoms (1 of 2 measures) NS Impact of eating disorder symptoms on daily functioning ↓ Restricting food to change shape or weight ↓ Body shape dissatisfaction NS Body part dissatisfaction ↓ Internalizing of the thin ideal
<ul style="list-style-type: none"> ↓ Statistically significant benefits favouring intervention over comparison condition. NS No significant difference between intervention and comparison condition. * Excessive dieting defined as consuming less than 1,000 calories a day. Analysis was limited to participants who did not engage in this behaviour prior to beginning the study. † Included fasting + self-induced vomiting or laxative or diuretic use (the last three of which were analyzed separately). 		

Implications for practice and policy

This systematic review identified two programs that successfully prevented the onset of eating disorders for teen girls — one in a general population (Education Program) and one for those at risk (Body Project). (Dissonance, the earlier version of Body Project, led to benefits but did not reduce eating disorder diagnoses.) These findings suggest the following recommendations for practice and policy.

- **Invest in effective prevention programs.** Both successful programs addressed an established risk factor for the development of eating disorders in teen girls — body dissatisfaction. As well, both taught skills for resisting social pressures to be thin. (The adjacent sidebar provides more information on the specific skills taught.) While replication studies are needed, these evaluations suggest that it is possible to prevent new cases of eating disorders and the suffering that accompanies them. Policy-makers in BC could support offering these successful examples, while evaluating the impact in local settings. Canadian studies evaluating new approaches and programs would also be helpful.
- **Make use of virtual delivery's added benefits.** Virtual delivery allows programs to reach more young people in need, particularly in rural and remote communities.²⁹ And the Body Project study suggests another potentially under-recognized benefit of virtual programs: recording the sessions allows young people to catch up on any missed content. This approach can not only improve program completion but also help young people integrate information on their own time.
- **Sustain prevention efforts long term.** The Dissonance and Body Project studies both examined outcomes several years after the programs ended — showing that some gains diminished over time. For example, Dissonance reduced dieting at one-year but not three-year follow-up, while the Body Project reduced self-reported eating disorder symptoms at six-month but not two-year follow-up. These findings suggest that some girls may benefit from booster sessions to ensure ongoing benefits. New program offerings and evaluations could build in such boosters.
- **Address established risk and protective factors.** The programs we reviewed focused on body dissatisfaction, a risk factor often first detected in adolescence. Yet as the [Overview](#) notes, other factors can emerge earlier in childhood, including problematic eating patterns, atypical body mass indices and high anxiety levels. Therefore, it may be possible to help more children by intervening in the early years.⁶⁻⁷ Intervening early should include offering effective anxiety prevention programs, such as those featured in our [Effective Interventions](#) report, to reduce this condition in and of itself *and* as a precursor to eating disorders. Practitioners can also bolster protective factors, including assisting with parent-teen relationships to improve closeness and relationship satisfaction.

Expanding efforts to prevent eating disorders is a crucial way to reduce the number of young people experiencing these conditions and the associated mental and physical stress and distress. Beyond helping young people achieve well-being and meet their potential, effective prevention efforts should also reduce later treatment costs by reducing the numbers in need. Given the benefits for individual children and families and for society, new prevention investments are therefore strongly warranted. 🙌

Teaching skills that can last a lifetime

The prevention programs we reviewed all taught girls specific skills they could continue to use long after the interventions ended. The Education Program helped the girls disentangle myths from facts in media presentations of beauty, thinness, fitness and health — helping them to develop critical approaches to media messaging.¹⁶ With Dissonance, girls provided examples when they experienced pressure to be thin and then generated “quick comebacks” that challenged the thin ideal.¹⁷ And girls who participated in the Body Project identified how pursuing the thin ideal affected them and planned how they would react when pushed to pursue the thin ideal in future.¹⁹ Teaching skills with longevity, as was done in these programs, can extend the reach of interventions.

METHODS

We use systematic review methods adapted from the *Cochrane Collaboration*. We build quality assessment into our inclusion criteria to ensure that we report on the best available research evidence, requiring that intervention studies use **randomized controlled trial** (RCT) evaluation methods and meet additional quality indicators. For this review, we searched for RCTs on programs aimed at preventing the onset of eating disorders. Table 3 outlines our database search strategy.

Table 3. Search Strategy	
Sources	<ul style="list-style-type: none">• Campbell Systematic Reviews, Cochrane Database of Systematic Reviews, CINAHL, ERIC, Medline and PsycINFO
Search Terms	<ul style="list-style-type: none">• Anorexia, avoidant/restrictive food intake disorder, binge eating, bulimia, eating disorders or selective eating <i>and</i> intervention, prevention, therapy or treatment
Limits	<ul style="list-style-type: none">• Published between 2014 and 2023 in a peer-reviewed journal• Reported on children aged 18 years or younger• Used systematic review, meta-analysis or RCT methods

To identify additional RCTs, we also hand-searched the reference lists from relevant systematic reviews and a previous issue of the *Quarterly*. Using this approach, we identified 178 articles describing 123 studies. Two team members then independently assessed each article, applying the inclusion criteria outlined in Table 4.

Table 4. Inclusion Criteria for RCTs
<ul style="list-style-type: none">• Participants were randomly assigned at study outset to intervention and comparison groups (i.e., no-treatment, treatment-as-usual or active control)• Participants had a mean age of 18 years or younger• Study authors provided clear descriptions of participant characteristics, settings and interventions• Interventions were evaluated in high-income countries for comparability to Canada• Interventions aimed to prevent eating disorders• At study outset, most participants did not meet diagnostic criteria for an eating disorder• Follow-up was three months or more (from the end of the intervention)• Attrition rates were 20% or less at final assessment and/or intention-to-treat analysis was used• Child outcome indicators included eating disorder diagnostic outcomes, assessed using two or more informant sources• At least one outcome rater was blinded to participants' group assignment• Reliability and validity were documented for primary outcome measures• Statistical significance was reported for primary outcome measures

Three RCTs met all inclusion criteria. Figure 1 depicts our search process, adapted from Preferred Reporting Items for Systematic Reviews and Meta-Analyses.³⁰ Data from these studies were then extracted, summarized and verified by two or more team members. Throughout our process, any differences among team members were resolved by consensus. 🙌

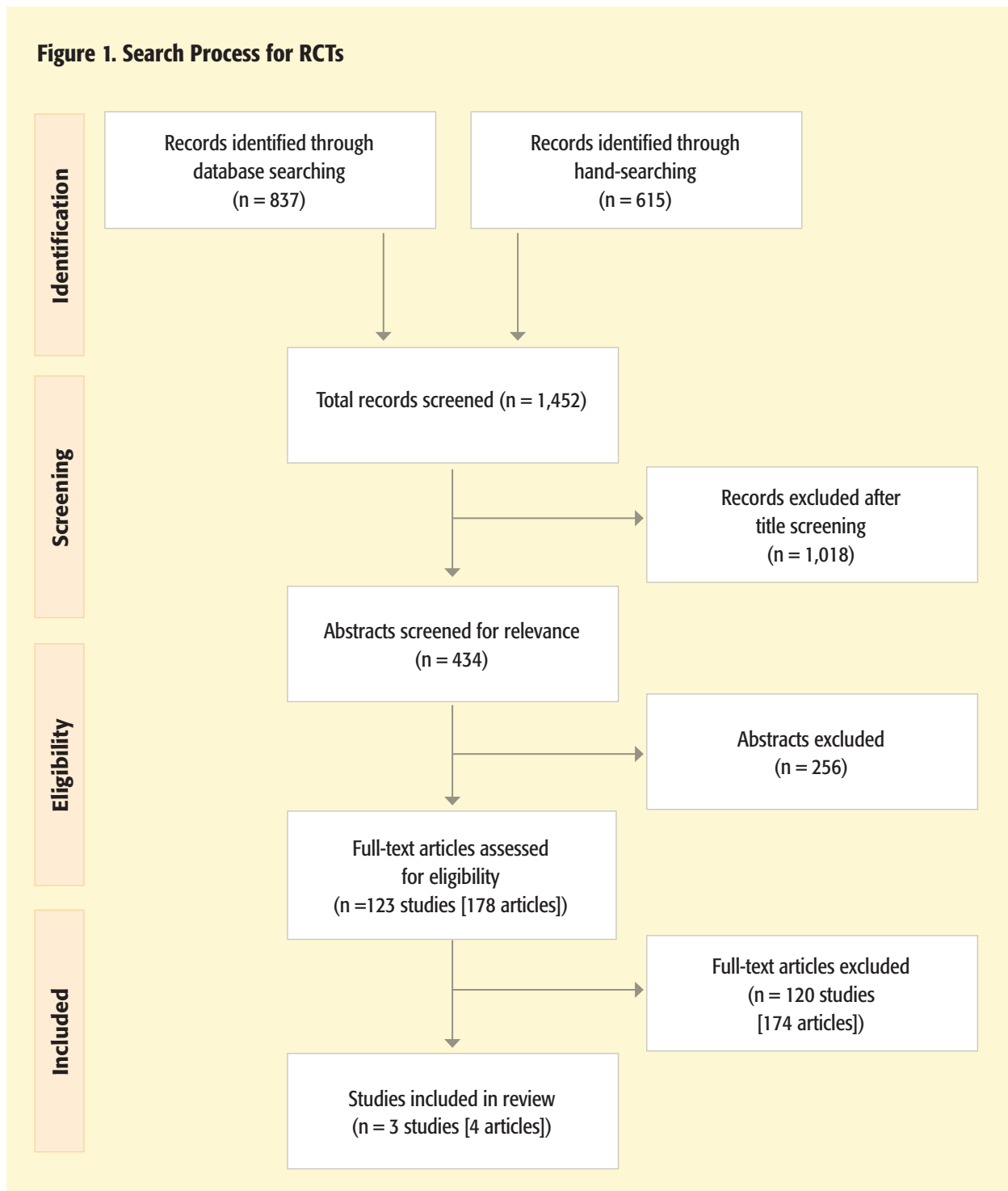
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Figure 1. Search Process for RCTs



RESEARCH TERMS EXPLAINED

Ascertaining the best available research evidence on how well interventions work for children is crucial in guiding public policy decisions and investments. **Randomized controlled trials** (RCTs) are an important standard in the health sciences for assessing effectiveness. RCTs work by randomly assigning participants to intervention or comparison groups. Randomizing guarantees that every young person enrolled in the study has an equal chance of being assigned to intervention or control groups. The goal is to have the intervention be the only difference, thereby adding confidence that any benefits found are not due to chance.

To determine how well an intervention works, researchers analyze relevant child outcomes. Analyses include assessing whether outcome differences between the intervention and control groups reach **statistical significance**. This process gives more certainty that any differences favouring the intervention were not due to chance. In the studies we reviewed, researchers used the typical convention of having at least 95% confidence that observed results reflected the intervention's real impact.

Beyond determining whether outcomes are statistically significant, it is important to evaluate how much meaningful difference the intervention made in the young person's life — the “real life” magnitude or clinical impact. Called **effect size**, this quantitative measure shows the strength of the relationship between the intervention and the outcome. The studies we reviewed used **Cohen's *d***, where effect sizes are quantified as small (0.20), medium (0.50) or large (0.80). 🖐️



REFERENCES

BC government staff can access original articles from [BC's Health and Human Services Library](#). Articles marked with * include randomized controlled trial data that was featured in our Review article.

1. American Psychiatric Association (APA). (2022). *Diagnostic and statistical manual of mental disorders: DSM-5-TR* (5th ed., text rev.). Washington, DC: APA.
2. Barican JL, Yung D, Schwartz C, et al. (2022). Prevalence of childhood mental disorders in high-income countries: A systematic review and meta-analysis to inform policymaking. *Evidence-based Mental Health*, 25, 36–44.
3. Statistics Canada. (2022). Table 17-10-0005-01. *Population estimates on July 1st, by age and sex*. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000501>
4. Arcelus J, Mitchell AJ, Wales J, et al. (2011). Mortality rates in patients with anorexia nervosa and other eating disorders: A meta-analysis of 36 studies. *Archives of General Psychiatry*, 68, 724–731.
5. Iwajomo T, Bondy SJ, de Oliveira C, et al. (2021). Excess mortality associated with eating disorders: Population-based cohort study. *British Journal of Psychiatry*, 219, 487–493.
6. Herle M, Stavola B, Hübel C, et al. (2020). A longitudinal study of eating behaviours in childhood and later eating disorder behaviours and diagnoses. *British Journal of Psychiatry*, 216, 113–119.
7. Yilmaz Z, Gottfredson NC, Zerwas SC, et al. (2019). Developmental premorbid body mass index trajectories of adolescents with eating disorders in a longitudinal population cohort. *Journal of the American Academy of Child and Adolescent Psychiatry*, 58, 191–199.
8. Berg S. (2023). AMA: Use of BMI alone is an imperfect clinical measure. American Medical Association. News release. <https://www.ama-assn.org/delivering-care/public-health/ama-use-bmi-alone-imperfect-clinical-measure>
9. Schaumberg K, Zerwas S, Goodman E, et al. (2019). Anxiety disorder symptoms at age 10 predict eating disorder symptoms and diagnoses in adolescence. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 60, 686–696.
10. Allen KL, Byrne SM, Crosby RD. (2015). Distinguishing between risk factors for bulimia nervosa, binge eating disorder, and purging disorder. *Journal of Youth and Adolescence*, 44, 1580–1591.
11. Prnjak K, Hay P, Mond J, et al. (2021). The distinct role of body image aspects in predicting eating disorder onset in adolescents after one year. *Journal of Abnormal Psychology*, 130, 236–247.
12. Beato-Fernández L, Rodríguez-Cano T, Belmonte-Llario A, et al. (2004). Risk factors for eating disorders in adolescents: A Spanish community-based longitudinal study. *European Child and Adolescent Psychiatry*, 13, 287–294.
13. Patton GC, Selzer R, Coffey C, et al. (1999). Onset of adolescent eating disorders: Population based cohort study over 3 years. *BMJ: British Medical Journal*, 318, 765–768.
14. Hazzard VM, Miller AL, Bauer KW, et al. (2020). Mother-child and father-child connectedness in adolescence and disordered eating symptoms in young adulthood. *Journal of Adolescent Health*, 66, 366–371.
15. Molendijk ML, Hoek HW, Brewerton TD, et al. (2017). Childhood maltreatment and eating disorder pathology: A systematic review and dose-response meta-analysis. *Psychological Medicine*, 47, 1402–1416.
16. * Favaro A, Zanetti T, Huon G, et al. (2005). Engaging teachers in an eating disorder preventive intervention. *International Journal of Eating Disorders*, 38, 73–77.
17. * Stice E, Rohde P, Gau J, et al. (2009). An effectiveness trial of a dissonance-based eating disorder prevention program for high-risk adolescent girls. *Journal of Consulting and Clinical Psychology*, 77, 825–834.

REFERENCES

18. * Stice E, Rohde P, Shaw H, et al. (2011). An effectiveness trial of a selected dissonance-based eating disorder prevention program for female high school students: Long-term effects. *Journal of Consulting and Clinical Psychology, 79*, 500–508.
19. * Ghaderi A, Stice E, Andersson G, et al. (2020). A randomized controlled trial of the effectiveness of virtually delivered Body Project (vBP) groups to prevent eating disorders. *Journal of Consulting and Clinical Psychology, 88*, 643–656.
20. Becker CB, Stice E. (2017). From efficacy to effectiveness to broad implementation: Evolution of the Body Project. *Journal of Consulting and Clinical Psychology, 85*, 767–782.
21. Harrison K. (2000). The body electric: Thin-ideal media and eating disorders in adolescents. *Journal of Communication, 50*, 119–143.
22. Yang H, Wang JJ, Tng GYQ, et al. (2020). Effects of social media and smartphone use on body esteem in female adolescents: Testing a cognitive and affective model. *Children, 7*, 148.
23. Fioravanti G, Bocci Benucci S, Ceragioli G, et al. (2022). How the exposure to beauty ideals on social networking sites influences body image: A systematic review of experimental studies. *Adolescent Research Review, 7*, 419–458.
24. Stice E, Presnell K, Gau J, et al. (2007). Testing mediators of intervention effects in randomized controlled trials: An evaluation of two eating disorder prevention programs. *Journal of Consulting and Clinical Psychology, 75*, 20–32.
25. Schaefer LM, Burke NL, Thompson JK. (2018). Thin-ideal internalization: How much is too much? *Eating and Weight Disorders, 24*, 933–937.
26. Thompson JK, Stice E. (2001). Thin-ideal internalization: Mounting evidence for a new risk factor for body-image disturbance and eating pathology. *Current Directions in Psychological Science, 10*, 181–183.
27. Stice E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin, 128*, 825–848.
28. Bardone-Cone AM, Harney MB, Maldonado C, et al. (2010). Defining recovery from an eating disorder: Conceptualization, validation, and examination of psychosocial functioning and psychiatric comorbidity. *Behaviour Research and Therapy, 48*, 194–202.
29. Kazdin AE. (2015). Technology-based interventions and reducing the burdens of mental illness: Perspectives and comments on the special series. *Cognitive and Behavioral Practice, 22*, 359–366.
30. Page MJ, McKenzie JE, Bossuyt PM, et al. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *Journal of Clinical Epidemiology, 134*, 178–189.

LINKS TO PAST ISSUES

The *Children's Mental Health Research Quarterly Subject Index* provides a detailed listing of topics covered in past issues, including links to information on specific programs.

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