# **Characteristics of studies**

### **Characteristics of included studies**

## leGrange 2007

Methods	Study design: Randomized controlled trial Study grouping: Open Label: Cluster RCT:								
Participants	Baseline Characteristics           FBT         Age (SD): 16.0 (1.7)           BN/BN-like (% of sample (N)): 100 (41)           Sex (% female of sample (N)): 98 (40)           BMI (SD): 21.8 (2.5)								
	Individual therapy • Age (SD): 16.1 (1.6) • BN/BN-like (% of sample (N)): 100 (39) • Sex (% female of sample (N)): 97 (38) • BMI (SD): 22.4 (3.4)								
	Included criteria: Participants, male or female, were eligible if they were aged12 to 19 years, which represented the potential full range forprecollege adolescents still living with their families or adultcaregivers, and met the operational definition of the DSM-IVcriteria for BN. Participants meeting the criteria for the "purgingsubtype" and the "nonpurging subtype" were included. Inaddition, participants who did not meet the DSM-IV bingeand-purge frequency criteria were included, provided theybinged or purged at least once per week for 6 months and metall other DSM-IV criteria for BN (ie, the combined frequency of bulimic behaviors had to equal at least 24 episodes over thepast 6 months, averaging about 1								
	episode per week). Excluded criteria: Participants were excluded if 1 of the following factors waspresent: associated physical or psychiatric disorder necessitatinghospitalization; insufficient knowledge of English that wouldprohibit understanding treatment; current physical dependenceon drugs or alcohol; current low body weight (body massindex [calculated as weight in kilograms divided by height inmeters squared] 17.5), thereby excluding patients with anexisting AN binge-and-purge subtype; current treatment for theeating disorder or current use of medication known to affecteating or weight; and physical conditions (eg, divided as publications and provide and provide and provide and provide and physical conditions (eg,								
	diabetes mellitusor pregnancy) or treatments known to influence eating orweight. Patients taking antidepressant medications were not excludedprovided they were taking a stable dose for 4 weeks. However, given the established antibulimic effects of fluoxetine, 13 patients taking 50 mg or more were excluded.								
Interventions	<ul> <li>Intervention Characteristics         FBT         <ul> <li>Frequency: 20 sessions over 6 months. treatment sessions are weekly in phase 1 (2-3 months), everysecond week in phase 2, and monthly in phase 3.</li> <li>Content: Family-based treatment for BN was developed as an adaptationofFBTforAN. In the firstphase, treatment aims atempoweringparents to disrupt binge eating,purging, restrictive dieting,andanyother pathological weightcontrol behaviors. It also aims to externalize and separate the disorderedbehaviors from the affected adolescent to promote parentalaction and decrease adolescent resistance to their assistance. Once abstinence from disordered eating and related behaviors isapproached, the second phase of treatment begins, during whichparents transition control over eating issues back to the adolescent. The third phase is focused on the ways the family can helpto address the effects ofBNonadolescentdevelopmentalprocesses.</li> </ul> </li> </ul>								
	<ul> <li>Individual therapy</li> <li>Frequency: 20 sessions over 6 months. weekly sessions in phase 1 (2-3 months), every second week in phase 2, and monthly in phase 3.</li> <li>Content: Supportive psychotherapy for adolescent BN was an adaptation of the version of this treatment for adults with BN formulatedby Walsh et al, 13 which, in turn, was derived from the earlierwork of Fairburn et al25 for adults with BN. Manualized SPTwas modified for use with adolescents with BN through onsitepilot testing and designed to provide a credible comparisontreatment intended to represent the type of therapy thatoutpatients might typically receive from psychotherapists providingshort-term treatment.13 Supportive psychotherapy containsno putative active therapeutic ingredients, such as stimuluscontrolor problem-solving techniques, or instruction or implicitadvice on changes in diet and eating patterns. Thereby, SPT isdesigned not to overlapwith CBT, interpersonal therapy, or analytictherapy. Supportive psychotherapy is nondirective and consistsof 3 phases,</li> </ul>								
Outcomes	Continuous: • Objective binges per month • Vomiting per month • All compensatory behavior • EDE Weight concerm • EDE Shape concerm • EDE Eating concern • EDE Restraint • Weight + shape concerns • Food preoccupation								
	Dichotomous: • Remission of ED								

	Dropout
Identification	Sponsorship source: Financial Disclosure: Dr le Grange receives royalties fromGuilford Press.Funding/Support: This study was supported by grant K23MH001923 from the National Institute of Mental Health(Dr le Grange).         Country: USA         Setting: outpatient         Comments:         Authors name: Daniel le Grange         Institution: Departments of Psychiatry, The University of Chicago, Chicago, Illinois         Email: legrange@uchicago.edu         Address: Daniel le Grange, PhD, Department ofPsychiatry, The University of Chicago, 5841 S MarylandAve, MC3077, Chicago, IL 60637
Notes	Identification:         Participants:         Study design:         Baseline characteristics:         Intervention characteristics:         Pretreatment:         Continuous outcomes:         Dichotomous outcomes:         Adverse outcomes:

### Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	
Allocation concealment (selection bias)	Low risk	
Blinding of participants and personnel (performance bias)	High risk	
Blinding of outcome assessment (detection bias)	High risk	
Incomplete outcome data (attrition bias)	Low risk	
Selective reporting (reporting bias)	Low risk	
Other bias	Low risk	

### Schmidt 2007

Methods	Study design: Randomized controlled trial Study grouping: Open Label: Cluster RCT:						
Participants	Baseline Characteristics           FBT         • Age (SD): 17.9 (1.6)           • BN/BN-like (% of sample (N)): 100 (41)         • Sex (% female of sample (N)): 100 (41)           • BMI (SD): 21.1 (2.8)         • MI (SD): 21.1 (2.8)						
	Individual therapy • Age (SD): 17.4 (1.8) • BN/BN-like (% of sample (N)): 100 (44) • Sex (% female of sample (N)): 95.5 (42) • BMI (SD): 21.1 (2.4)						
	<ul> <li>Included criteria: Consecutively referred patients were invited to participate ifthey were 13-20 years of age, met DSM-IV criteria for bulimianervosa or eating disorder not otherwise specified, and had atleast one "close other" to accompany them for "family treatment."</li> <li>Excluded criteria: We excluded patients with a body mass index below the10th percentile for age and sex (5), patients whose knowledge ofEnglish was insufficient to understand the treatment, and patientswith learning disability, severe mental illness, or substancedependence. We did not exclude patients taking antidepressantsprovided they had been on a stable dose for at least 4 weeks.</li> </ul>						
Interventions	<ul> <li>Intervention Characteristics         FBT         <ul> <li>Frequency: Patients were offered up to 13 sessions with close others and two individualsessions over a 6-month period.</li> <li>Content: The family therapy used in this study wasadapted from the Maudsley model of family therapy for anorexianervosa (6, 7) and detailed in a manual . In this model, the family is seen as a key resource in theyoung person's recovery. An attempt is made to engage familymembers and show them that they are in the best position to helpthe adolescent. Treatment is problem oriented, emphasizing therole of the family in promoting restoration of normal eating andproviding education about the effects of bulimia.</li> </ul> </li> </ul>						
	<ul> <li>Individual therapy</li> <li><i>Frequency</i>: Patients had 10 weekly sessions, three monthly followupsessions, and two optional sessions with a cl other.</li> <li><i>Content</i>: We used a manual (8) that was previouslytested with adults with bulimia nervosa (4). The Flesch-Kincaid Grade Level test suggests that the manual can be read byeighth graders (ages 13–14 years). Accompanying</li> </ul>						

	workbooks areavailable for patients and close others, as well as a guide for clinicians(9). Thetherapist's role is to motivate patients and guide them through the workbook to fit their needs.
Outcomes	Continuous:         • Objective binges per month         • Weight + shape concerns         • EDE Restraint         • EDE Eating concern         • All compensatory behavior         • EDE Shape concern         • Vomiting per month         • EDE Weight concern         • Food preoccupation         Dichotomous:         • Remission of ED         • Dropout
Identification	Sponsorship source: Dr. Treasurereceives a consultancy fee from the Capio Hospital to provide carerworkshops. All         other authors report no competing interests.Supported by grant 1206/88 from the Health Foundation, U.K., toDrs. Schmidt,         Eisler, Treasure, Beecham, and Rabe-Hesketh. The authorsthank Dr. Rudolf Uher for helpful comments on the manuscript.         Country: United Kingdom         Setting: outpatient         Comments:         Authors name: Ulrike Schmidt         Institution: Section of Eating Disorders, Clinical Trials Unit, Centre for the Economics of Mental Health, and the Section of Family Therapy, Institute of Psychiatry, London         Email: u.schmidt@iop.kcl.ac.uk         Address: Dr. Schmidt, Section of Eating Disorders (PO59), Instituteof Psychiatry, De Crespigny Park, Denmark Hill, London SE5 8AF, UK
Notes	Identification:         Participants:         Study design:         Baseline characteristics:         Intervention characteristics:         Pretreatment:         Continuous outcomes:         Dichotomous outcomes:         Adverse outcomes:

### Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	
Allocation concealment (selection bias)	Low risk	
Blinding of participants and personnel (performance bias)	High risk	
Blinding of outcome assessment (detection bias)	Low risk	
Incomplete outcome data (attrition bias)	High risk	
Selective reporting (reporting bias)	Low risk	
Other bias	Low risk	

Footnotes

### **Characteristics of excluded studies**

Footnotes

## Characteristics of studies awaiting classification

Footnotes

### **Characteristics of ongoing studies**

Footnotes

# **References to studies**

**Included studies** 

### leGrange 2007

le Grange, D.; Crosby, R. D.; Rathouz, P. J.; Leventhal, B. L.. A randomized controlled comparison of family-based treatment and supportive psychotherapy for adolescent bulimia nervosa.. Archives of General Psychiatry 2007;64(9):1049-1056. [DOI: 64/9/1049 [pii]]

#### Schmidt 2007

Schmidt,U.; Lee,S.; Beecham,J.; Perkins,S.; Treasure,J.; Yi,I.; Winn,S.; Robinson,P.; Murphy,R.; Keville,S.; Johnson-Sabine,E.; Jenkins,M.; Frost,S.; Dodge,L.; Berelowitz, M.; Eisler, I.. A randomized controlled trial of family therapy and cognitive behavior therapy guided self-care for adolescents with bulimia nervosa and related disorders.. American Journal of Psychiatry 2007;164(4):591-598. [DOI: 164/4/591 [pii]]

### **Excluded studies**

## **Data and analyses**

### 1 FBT vs no FBT

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.1 ED behaviour, Objective binges per month, end of treatment	1	80	Mean Difference (IV, Fixed, 95% CI)	0.90 [-3.90, 5.70]
1.2 ED behaviour, Vomiting per month, end of treatment	1	80	Mean Difference (IV, Fixed, 95% CI)	-12.60 [-21.25, -3.95]
1.3 ED behaviour, end of treatment	1		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
1.3.1 Binge eating	1	85	Risk Ratio (M-H, Random, 95% CI)	2.86 [1.24, 6.60]
1.3.2 Purging abstinence	1	85	Risk Ratio (M-H, Random, 95% CI)	1.40 [0.69, 2.83]
1.4 Remission of ED, longest FU	2	165	Risk Ratio (IV, Random, 95% CI)	1.83 [0.96, 3.50]
1.5 Dropout, end of treatment	2	165	Risk Ratio (IV, Random, 95% CI)	1.03 [0.58, 1.85]
1.6 Psychological ED symptoms, EDE Restraint, end of treatment	1	80	Mean Difference (IV, Fixed, 95% CI)	-0.80 [-1.48, -0.12]
1.7 Psychological ED symptoms, EDE Eating concern, end of treatment	1	80	Mean Difference (IV, Fixed, 95% CI)	-0.50 [-1.14, 0.14]
1.8 Psychological ED symptoms, EDE Shape concern, end of treatment	1	80	Mean Difference (IV, Fixed, 95% CI)	-0.90 [-1.62, -0.18]
1.9 Psychological ED symptoms, EDE Weight concern, end of treatment	1	80	Mean Difference (IV, Fixed, 95% CI)	-0.80 [-1.52, -0.08]
1.10 Psychological ED symptoms, Food preoccupation, end of treatment	1	85	Mean Difference (IV, Fixed, 95% CI)	0.00 [-0.36, 0.36]
1.11 Psychological ED symptoms, Weight + shape concerns, end of treatment	1	85	Mean Difference (IV, Fixed, 95% CI)	0.60 [-0.04, 1.24]

## **Figures**

### Figure 1 (Analysis 1.1)



Risk of bias legend

(A) Random sequence generation (selection bias)

(B) Allocation concealment (selection bias)

(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias) (E) Incomplete outcome data (attrition bias)

(F) Selective reporting (reporting bias)

(G) Other bias

Forest plot of comparison: 1 FBT vs no FBT, outcome: 1.1 ED behaviour, Objective binges per month, end of treatment.

### Figure 2 (Analysis 1.2)



(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias)

(E) Incomplete outcome data (attrition bias)

(F) Selective reporting (reporting bias)

(G) Other bias

Forest plot of comparison: 1 FBT vs no FBT, outcome: 1.2 ED behaviour, Vomiting per month, end of treatment.

### Figure 3 (Analysis 1.3)

	FBT		no FE			Risk Ratio	Risk Ratio	Risk of Bias
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% Cl	M-H, Random, 95% Cl	ABCDEFG
1.3.1 Binge eating								
Schmidt 2007	16	41	6	44	100.0%	2.86 [1.24, 6.60]		
Subtotal (95% CI)		41		44	100.0%	2.86 [1.24, 6.60]		
Total events	16		6					
Heterogeneity: Not ap	plicable							
Test for overall effect:	Z = 2.46 (	(P = 0.0	01)					
1.3.2 Purging abstine	ence							
Schmidt 2007	13	41	10	44	100.0%	1.40 [0.69, 2.83]		
Subtotal (95% CI)		41		44	100.0%	1.40 [0.69, 2.83]		
Total events	13		10					
Heterogeneity: Not ap	plicable							
Test for overall effect:	Z = 0.92 (	(P = 0.3)	36)					
							0.01 0.1 1 10 100	ł
							Favours FBT Favours no FBT	
							ravouisroi favouisilofoi	
Risk of bias legend								

(A) Random sequence generation (selection bias)

(B) Allocation concealment (selection bias)

(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias)

(E) Incomplete outcome data (attrition bias) (F) Selective reporting (reporting bias)

(G) Other bias

Forest plot of comparison: 1 FBT vs no FBT, outcome: 1.3 ED behaviour, end of treatment.

### Figure 4 (Analysis 1.4)

	FBT		no FBT			Risk Ratio		Risk Ratio	Risk of Bias	
Study or Subgroup	Events	Total	Events	Total	Weight	IV, Random, 95% Cl	Year	IV, Random, 95% Cl	ABCDEFG	
Schmidt 2007	12	41	9	44	64.3%	1.43 [0.67, 3.04]	2007			
leGrange 2007	12	41	4	39	35.7%	2.85 [1.01, 8.10]	2007			
Total (95% CI)		82		83	100.0%	1.83 [0.96, 3.50]		◆		
Total events	24		13							
Heterogeneity: Tau <sup>2</sup> = Test for overall effect				P = 0.2	9); I <b>²</b> = 10	%		0.001 0.1 1 10 1000 Favours no FBT Favours FBT		

<u>Risk of bias legend</u>

(A) Random sequence generation (selection bias)

(B) Allocation concealment (selection bias)

(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias)

(E) Incomplete outcome data (attrition bias) (F) Selective reporting (reporting bias)

(G) Other bias

Forest plot of comparison: 1 FBT vs no FBT, outcome: 1.4 Remission of ED, longest FU.

### Figure 5 (Analysis 1.5)

	FB1		no FE			Risk Ratio		Risk Ratio	Risk of Bias
Study or Subgroup	Events	Total	Events	Total	Weight	IV, Random, 95% Cl	Year	IV, Random, 95% Cl	ABCDEFG
Schmidt 2007	12	41	13	44	78.0%	0.99 [0.51, 1.92]	2007		
leGrange 2007	5	41	4	39	22.0%	1.19 [0.34, 4.11]	2007		
								1	
Total (95% CI)		82		83	100.0%	1.03 [0.58, 1.85]		<b>•</b>	
Total events	17		17						
Heterogeneity: Tau <sup>2</sup> =	= 0.00; Ch	i <sup>2</sup> = 0.0	6, df = 1 (	(P = 0.8	0); I <sup>z</sup> = 09	6			
Test for overall effect	Z=0.10	(P = 0.9)	32)					0.001 0.1 1 10 1000 Favours FBT Favours no FBT	
		•						ravouisroi FavouisnoFBI	
Risk of bias legend									

Risk of blas legend

(A) Random sequence generation (selection bias)

(B) Allocation concealment (selection bias)

(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias)

(E) Incomplete outcome data (attrition bias)

(F) Selective reporting (reporting bias)

(G) Other bias

Forest plot of comparison: 1 FBT vs no FBT, outcome: 1.5 Dropout, end of treatment.

### Figure 6 (Analysis 1.6)



(B) Allocation concealment (selection bias)

(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias)

(E) Incomplete outcome data (attrition bias)

(F) Selective reporting (reporting bias)

(G) Other bias

Forest plot of comparison: 1 FBT vs no FBT, outcome: 1.6 Psychological ED symptoms, EDE Restraint, end of treatment.

### Figure 7 (Analysis 1.7)

		FBT		no	FBT			Mean Difference	Mean Difference	Risk of Bias
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% CI	IV, Fixed, 95% Cl	ABCDEFG
leGrange 2007	1	1.5	41	1.5	1.4	39	100.0%	-0.50 [-1.14, 0.14]		
Total (95% CI)			41			39	100.0%	-0.50 [-1.14, 0.14]	•	
Heterogeneity: Not ap	plicable								-4 -2 0 2 4	
Test for overall effect:	Z = 1.54	+ (P =	0.12)						Favours FBT Favours no FBT	
Risk of bias legend (A) Random sequenc (B) Allocation conceal (C) Blinding of particit; (D) Blinding of outcom (E) Incomplete outcor (F) Selective reporting (G) Other bias	lment (s pants an ne asse ne data	electi Id per ssme (attrit	ion bia rsonne ent (det ion bia	s) I (perfor tection k	man	ce bias	)			
orest plot of compa	irison: 1	1 FB	T vs n	o FBT,	oute	come:	1.7 Psyc	hological ED sym	ptoms, EDE Eating concern, end	of treatment.

#### Figure 8 (Analysis 1.8)



(F) Selective reporting (reporting bias)

(G) Other bias

Forest plot of comparison: 1 FBT vs no FBT, outcome: 1.8 Psychological ED symptoms, EDE Shape concern, end of treatment.

### Figure 9 (Analysis 1.9)

Study or Subgroup	l Mean	FBT SD	Total	no Mean	FBT SD	Total	Weight	Mean Difference IV, Fixed, 95% Cl	Mean Difference IV, Fixed, 95% Cl	Riskof Bias A B C D E F G
leGrange 2007	1.8	1.6	41	2.6	1.7	39	100.0%	-0.80 [-1.52, -0.08]		
Total (95% CI)			41			39	100.0%	-0.80 [-1.52, -0.08]	•	
Heterogeneity: Not ap	oplicable								-10 -5 0 5 10	-
Test for overall effect:	Z= 2.16	6 (P =	0.03)						Favours FBT Favours no FBT	
<u>Risk of bias legend</u>										
(A) Random sequent	ce gener	ation	(selec	tion bia:	s)					
(B) Allocation concea	lment (s	elect	ion bia	s)						

(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias)

(E) Incomplete outcome data (attrition bias)

(F) Selective reporting (reporting bias)

(G) Other bias

Forest plot of comparison: 1 FBT vs no FBT, outcome: 1.9 Psychological ED symptoms, EDE Weight concern, end of treatment.

### Figure 10 (Analysis 1.10)



(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias) (E) Incomplete outcome data (attrition bias)

(E) Incomplete outcome data (attrition bias) (F) Selective reporting (reporting bias)

(G) Other bias

(G) Other blas

Forest plot of comparison: 1 FBT vs no FBT, outcome: 1.10 Psychological ED symptoms, Food preoccupation, end of treatment.

### Figure 11 (Analysis 1.11)

	1	BT		no	FBT			Mean Difference	Mean Difference	Risk of Bias
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% CI	IV, Fixed, 95% CI	ABCDEFG
Schmidt 2007	4	1.3	41	3.4	1.7	44	100.0%	0.60 [-0.04, 1.24]		
Total (95% CI)			41			44	100.0%	0.60 [-0.04, 1.24]	◆	
Heterogeneity: Not applicable										
Test for overall effect: Z = 1.84 (P = 0.07) -4 -2 0 2 4 Favours FBT Favours no FBT										
Risk of bias legend										
(A) Random sequence generation (selection bias)										
(B) Allocation concealment (selection bias)										
(C) Blinding of participants and personnel (performance bias)										
(D) Blinding of outcome assessment (detection bias)										
(E) Incomplete outcome data (attrition bias)										
(F) Selective reporting (reporting bias)										
(G) Other bias										

Forest plot of comparison: 1 FBT vs no FBT, outcome: 1.11 Psychological ED symptoms, Weight + shape concerns, end of treatment.