

Appendix D: Evidence tables

<ul style="list-style-type: none"> - Bibliographic reference 	<ul style="list-style-type: none"> - Addolorato (2004): Psychological support counselling improves gluten-free diet compliance in coeliac patients with affective disorders
<ul style="list-style-type: none"> - Study type and aim 	<ul style="list-style-type: none"> - RCT to evaluate effect of psychosocial counselling on GFD compliance in CD patients
<ul style="list-style-type: none"> - Study quality 	<ul style="list-style-type: none"> - NICE RCT quality checklist: - 15. Was an appropriate randomisation method used? No – method unclear

– Bibliographic reference	– Addolorato (2004): Psychological support counselling improves gluten-free diet compliance in coeliac patients with affective disorders
	<p>16. Was there adequate concealment of allocation? No – unclear</p> <p>17. Were groups comparable at baseline? Yes – groups matched for age gender and education</p> <p>18. Did the comparison groups receive the same care apart from the intervention of interest? Yes</p> <p>19. Were participants receiving care kept blind to their treatment allocation? Not applicable</p> <p>20. Were individuals administering care kept blind to treatment allocation? Not applicable</p> <p>21. Were all groups followed for equal amount of time? Yes</p> <p>22. Were groups comparable for treatment completion? Yes</p> <p>23. Were groups comparable with respect to availability of outcome data? Yes</p> <p>24. Did the study have an appropriate length of follow-up? Yes</p> <p>25. Did the study use a precise definition of outcome? Yes,</p> <p>26. Did the study use a valid and reliable method to determine outcome? Yes, standardised STAI measure used</p> <p>27. Were investigators kept blind to participants exposure to intervention? Not applicable</p> <p>28. Were investigators kept blind to other confounding and prognostic factors? Not applicable</p> <p>–</p> <p>– Unclear whether patients were consecutively recruited or how structured counselling sessions were and whether a single facilitator held these, however the patient flow, matching of groups in terms of intervention time and frequency and patient age, gender, and marital status were all clear. CD was biopsy confirmed for all patients and well-standardised psychometric tests were used to assess anxiety and depression.</p> <p>–</p>
– Number of patients	– N=66
– location	– Italy
– Patient characteristics	<p>– Inclusion criteria: out of all patients referred to outpatient centre between 1995 and 2003, 112 newly diagnosed adults with CD were considered. Out of these, 66 patients with anxiety and depression were considered for the study. Diagnosis based on positive antibodies and histological evidence of subtotal or total duodenal villous atrophy. Patients randomised into 2 groups selected as to match probands on the basis of gender, age, residence, employment, socio-economic, and marital status</p> <p>– Exclusion criteria: presence of psychiatric disorders other than anxiety and/or depression, endocrine disorders,</p>

<p>– Bibliographic reference</p>	<p>– Addolorato (2004): Psychological support counselling improves gluten-free diet compliance in coeliac patients with affective disorders</p>
	<p>abuse of alcohol and/or other substances, consumption of psychoactive drugs, and/or current psychiatric treatment, and second causes of villous atrophy.</p> <ul style="list-style-type: none"> – Mean age: Group A: 31.6; Group B: 29.8 – Mean age at diagnosis: – Mean years since diagnosis: –
<p>– Intervention</p>	<p>– Psychological support counselling</p> <ul style="list-style-type: none"> • Each subject of both groups was checked as an out-patient every 2 weeks for duration of the study • Group A: <ul style="list-style-type: none"> ○ Counselling performed as individual talks directed mainly to the stress management and, in particular, aimed at the identifying the cause and effect problems related to CD and at problems that the individual found difficult to resolve in the daily life and related to the GFD. Counselling directed to evaluate and discuss dietary restrictions and related problems that lead to difficulty in social relationships. ○ Recognized that social occasions revolve around food and restrictions on eating can lead to decreased social life and onset of inadequacy and isolation. These feelings were evaluated at each session and counselling was directed at its regression. ○ During part of these meetings the family members living with the patient actively participated. • Group B: <ul style="list-style-type: none"> ○ Same time as was spent in counselling sessions was spent for the medical examination and clinical data evaluation. <p>–</p>
<p>– Investigations</p>	<ul style="list-style-type: none"> – Patients studied before and after 6 months on GFD. Blood sample collected every 2 months to determine AGA and EMA antibodies. – After 6 months, histological improvement or recovery assessed – Adherence to GFD assessed on basis of participant's self-reported and family member interview, by clinical symptoms and histological recovery, and by antibody results. – Psychological assessment: All patients given 2 self-rating psychometric tests: state-trait anxiety inventory (STAI), and self-rating depression scale (SDS) <ul style="list-style-type: none"> • STAI: 20 multiple choice; each item has score 1-4 so that total can range from 20-80. Allows measurement of current

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	<p>anxiety (Y1) as well as stable proneness to anxiety (Y2). Only Y1 was used here as previous study showed little difference between patients and controls in Y2. Subjects divided into high and low based on median value of 40.</p> <ul style="list-style-type: none"> • SDS: Zung SDS modified to Ciacci 1998 version used. Original version contains 20 multiple choice score 1-4 each, total between 20 – 80 possible. Modified version does not contain 3 items relating to gastrointestinal symptoms of depression; a rough point score of 37 was considered high. • <p>– The SDS and STAI were administered before and 6 months after GFD</p>
Length of follow up	– 6 months
Outcome	<ul style="list-style-type: none"> • Resolution of symptoms • Patient experience • Complications of cd • <u>Adherence</u> • <u>Health related quality of life:</u> • Impact on carers
Results	<p>– Health related quality of life:</p> <ul style="list-style-type: none"> • Anxiety: <ul style="list-style-type: none"> ○ Group A: At the end of the study 5/33 patients in Group A reported anxiety ○ Group B: At the end of the study 8/33 patients in Group B reported anxiety ○ No significant difference between the groups : Chi 2 = 0.58 • Depression: At the end of the study 5/33 patients in Group A reported anxiety <ul style="list-style-type: none"> ○ At the end of the study 5/33 patients in Group A reported depression ○ At the end of the study 26/33 patients in Group B reported depression ○ Significant difference between the groups: Chi 2 = 10.16 (15.1% vs 79%) <p>– Adherence:</p> <ul style="list-style-type: none"> • Group A : 3/33 showed poor compliance • Group B: 13/33 showed poor compliance • Significant difference: Chi 2 = 5.11 (39% vs 9%)

Appendix D: Evidence tables

- Bibliographic reference	- Addolorato (2004): Psychological support counselling improves gluten-free diet compliance in coeliac patients with affective disorders
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- Source of funding	- Supported by grants from Associazione Ricerca in Medicina' Bologna, Italy
- Comments	
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- Bibliographic reference	- Erichiello (2010): Celiac disease: predictors of compliance with a gluten-free diet in adolescents and young adults
- Study type and aim	- Cross-sectional study to identify risk as well as protective factors related to compliance with the GFD in a cohort of teenagers with CD
- Study quality	<p>CASP QUALITATIVE TOOL:</p> <ol style="list-style-type: none"> 1. Was there a clear statement of the aims of the research? Yes 2. Is a qualitative methodology appropriate? Yes 3. Was the research design appropriate to address the aims of the research question? Yes 4. Was the recruitment strategy appropriate to the aims of the research? Yes 5. Was the data collected in a way that addressed the research issue? Yes 6. Has the relationship between researcher and participants been adequately considered? Not applicable 7. Has ethical issues been taken into consideration? Yes 8. Was the data analysis sufficiently rigorous? Yes 9. Is there a clear statement of findings? Yes 10. How valuable is the research? Valuable

– Bibliographic reference	– Addolorato (2004): Psychological support counselling improves gluten-free diet compliance in coeliac patients with affective disorders
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– Number of patients	– N=204
– location	– Italy
– Patient characteristics	<p>– Inclusion criteria: patients consecutively recruited from Campania region on basis of age between 13 – 30 years, CD diagnosis according to ESPGHAN, and willingness to participate. Patients were divided into 2 groups on basis of diagnosis before 13 years (group 1) and diagnosis after 13yrs (group 2)</p> <p>– Exclusion criteria: None listed</p> <p>– Mean age: 62% 13 – 19 years; 31% 19 – 26; 6.5% 26 – 30 years</p> <p>– Mean age at diagnosis: 86% diagnosis <13 years; 15% age at diagnosis > 13 years</p>
– Signs and symptoms	<ul style="list-style-type: none"> • Abdominal pain – 10% • Constipation – 5% • Diarrhoea – 4% • Failure to thrive – 3.5% • Headache/neurological disturbance – 4.4% • Skin disease - 3% • No symptoms – 69.6%
– Investigations	<ul style="list-style-type: none"> • Each patient underwent complete clinical check-up • N=199 underwent antibody testing for TTG with immunosorbent assay <p>–</p> <p>– Standardized self-admin questionnaire</p> <ul style="list-style-type: none"> • Standardized self-admin questionnaire modified by previous study was used/ Psych working in the team adapted the form from internationally validated references <ul style="list-style-type: none"> ○ This was admin after a 2 day training session of the investigators ○ Evaluated family and social integration, integration within school environment, sexual life, on visual analogue sales rated 0 – 25 ranging from poor to excellent ○ Social integration investigated through description of the daily life of patients including: <ul style="list-style-type: none"> ▪ Number of outings

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	<ul style="list-style-type: none"> ▪ Participation in social events, ▪ Number of friends ▪ Play activities ○ Feeling of self-constraint related to the GFD was also investigated ○ Smoking habit ○ School performance – – Food habit assessment <ul style="list-style-type: none"> • Managed by 2 dieticians • Patients questioned about their diet in the previous day, using standardised 1-day recall form, and about total amount of gluten-containing items available to this range of population • Daily gluten intake was estimated summing total amount of gluten containing foods ingested in previous 30 days
– Length of follow up	– N/a
– Outcome	<ul style="list-style-type: none"> • Resolution of symptoms • Patient experience • Complications of cd • Adherence • Health related quality of life • Impact on carers
– Results	<ul style="list-style-type: none"> – Patient experience <ul style="list-style-type: none"> • Self-rated social integration: 181 patients reported good family integration • 186 reported good social relationships • 180 reported good school integrations • 110 (54%) felt that CD occasionally or often limited their social life • Those with excellent school integration adhered to diet better than those with bad ofr sufficient integration – 83%. 50% of poor integration did not adhere to diet. • Good social relationships significantly related to compliance – 81%

– Bibliographic reference	– Addolorato (2004): Psychological support counselling improves gluten-free diet compliance in coeliac patients with affective disorders
	<ul style="list-style-type: none"> • People without feelings of self-constraint adhered better than those without feelings of self-constraint – – Adherence • 97% of compliers tested TTG negative, 3% had positive titre despite compliance • 70% poor compliers had negative TTG, only 30% showed positive TTG • 111/150 good compliers had no health complaints • 31/54 poor compliers had no health complaints • Health complaints more frequent in compliers vs noncompliant
– Source of funding	– This work was supported by European laboratory for the investigation of Food-Induced Diseases and Italian Ministry of Instruction, University, and Research
– Comments	
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– Bibliographic reference	– Sainsbury (2013): A randomised controlled trial of an online intervention to improve gluten-free diet adherence in celiac disease
– Study type and aim	– RCT (waitlist control) to test effectiveness of an interactive online intervention to improve GFD adherence in adults with CD
– Study quality	<ol style="list-style-type: none"> 1. Was an appropriate randomisation method used? Yes – random email allocation 2. Was there adequate concealment of allocation? Yes – allocated via computer generation to private email 3. Were groups comparable at baseline? Yes – groups matched for all variables 4. Did the comparison groups receive the same care apart from the intervention of interest? Not applicable 5. Were participants receiving care kept blind to their treatment allocation? Not applicable 6. Were individuals administering care kept blind to treatment allocation? Not applicable 7. Were all groups followed for equal amount of time? Yes 8. Were groups comparable for treatment completion? Yes 9. Were groups comparable with respect to availability of outcome data? Yes 10. Did the study have an appropriate length of follow-up? Yes

– Bibliographic reference	– Addolorato (2004): Psychological support counselling improves gluten-free diet compliance in coeliac patients with affective disorders
	<p>11. Did the study use a precise definition of outcome? Yes, 12. Did the study use a valid and reliable method to determine outcome? Yes 13. Were investigators kept blind to participants exposure to intervention? Not applicable 14. Were investigators kept blind to other confounding and prognostic factors? Not applicable</p> <p>– Overall risk of bias: serious: Selection of patients, patient population, reference and index tests all match review criteria. However, patient flow is of concern as a number of participants are unaccounted for.</p>
– Number of patients	– N = 189 (88 randomised to waitlist; 101 randomised to intervention)
– location	– Australia
– Patient characteristics	<p>– Inclusion criteria: Participants recruited from coeliac society of NSW. Database screened to ID members who: had biopsy-confirmed CD; GFD of > 3 months; aged >16 years. Decision to include participants with varying levels of adherence at baseline to avoid excluding large number of participants who could still benefit even though report strict adherence as may be inadvertently be ingesting gluten</p> <p>– Exclusion criteria: none listed</p> <p>– Mean age: 46.5 years</p> <p>– Mean age at diagnosis:</p> <p>– Mean years since diagnosis: 4.6 years</p> <p>–</p>
– Intervention	<p>– Email sent to 1500 people who met inclusion criteria which linked to study site and baseline questionnaire. Study was outlined as program to help better manage challenges of GFD.</p> <p>–</p> <ul style="list-style-type: none"> • Intervention admin online via LimeSurvey • Baseline Q's took 20 mins • 4 days later, randomized to: <ul style="list-style-type: none"> ○ Intervention condition – received an email link to study website to complete module 1 ○ Waitlist control – received an email informing them they would be contacted in 8 weeks to complete post-survey and would be given access to intervention materials at that time.

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	<ul style="list-style-type: none"> • Progression through 6 modules managed using automated emails and text messages • Had to complete module 1 to progress however was the possible to skip a module and remain active in the intervention - • Modules: <ul style="list-style-type: none"> ○ 1 – Education: about CD and GFD ○ 2 – Structured problem solving: to manage internal and external problems associated with GFD ○ 3 – Communication: styles of communication typical situation where assertiveness may be needed, steps to assertiveness; communicating about the GFD in order to receive safe meal while not drawing attention to self ○ 4 – thinking about GFD: rel between thoughts feelings and behaviour – reactions to CD diagnosis and cognitive restructuring of negative thoughts ○ 5 – balancing life with GFD: effects of narrowed focus, pleasant activity scheduling, SMART goal-setting ○ 6 – Bringing it all together: summary of skills learned; label reading/avoiding contamination • Each module took 30mins to complete, one a week. • All participants in both groups sent post-survey questionnaire after specified period of time
- Investigations	<ul style="list-style-type: none"> - Measures: <ul style="list-style-type: none"> • At baseline, participants completed measures of demographic and CD info • Following questionnaire battery completed at baseline, post-intervention, and 3 month follow-up. - • GFD adherence measured using Celiac dietary adherence test (Leffler et al., 09) scores range 7 – 35, with higher score rep poorer adherence • Scores grouped into: <ul style="list-style-type: none"> ○ Excellent to fairly good (7 – 12) ○ Moderate (13- 17) ○ Fair to poor (18 – 35) • WHO QOL assessment BREF used to measure overall QoL and physical and psychological QoL • Psych symptoms assessed using depression, anxiety, stress scale and eating disorders inventory -3 eating disorder risk scale

- Bibliographic reference	- Addolorato (2004): Psychological support counselling improves gluten-free diet compliance in coeliac patients with affective disorders
	<ul style="list-style-type: none"> • Knowledge assessed using lists adapted from educational materials used by the Celiac society
- Length of follow up	- 3 months
- Outcome	<ul style="list-style-type: none"> • Resolution of symptoms • Patient experience • Complications of cd • <u>Adherence</u> • <u>Health related quality of life</u> • Impact on carers
- Results	<ul style="list-style-type: none"> - Baseline differences between groups - Two groups did not differ at baseline on any of the demographic, adherence, QoL, or psych variables - - GFD adherence • Significant improvement over time in adherence for both conditions (F=8.89, p = 0.0002) • Time x condition interaction effect also significant (F=5.67, p=0.014) • Apored smample t test intervention group improved adherence scores from baseline to poast (t=3.83) while waitlist control unchanged (t-0.42) • Intention to treat sample this represented a small to medium effect size (Cohens d = 0.69; interaction effect F = 6.49) - - Clinical significance • 43% waitlist inadequate adherence at baseline • Post test measure available 29/38 of these - 55% still classed as poor adherence 38% had improved their category • 39% intervention group had inadequate intercention at baseline • Of 26/39 participants for whom post data available for, 65% had improved adherence category , while 35% remained inadequate - - 3 month follow up • Difference in GFD adherence from baseline to 3 month was still significant (t=3.63)

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	<ul style="list-style-type: none"> • No difference between immediate post intervention and 3 months scores (t = 0.53) • Difference in knowledge from baseline to 3 month significant (t=4.39) • No diff from post-test to 3 month in knowledge (t=0.5)
- Source of funding	- None
- Comments	
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- Bibliographic reference	- Rashid (2005): Celiac disease: Evaluation of the diagnosis and dietary compliance in Canadian children
- Study type and aim	- Cross sectional study to characterise clinical features at presentation as well as associated disorders, family history, and evaluation of compliance with a gluten-free diet in children with CD
- Study quality	<ol style="list-style-type: none"> 1. Could the selection of patients have introduced bias? NO – all patients who met inclusion criteria were included 2. Is there concern that the included patients do not match the review question? NO. all patients had biopsy confirmed CD 3. Could the conduct or interpretation of the index test have introduced bias? YES – data is about children, however data was given retrospectively by their parents. Inherent level of bias in terms of recall and perspective 4. Is there concern that the index test, its conduct, or interpretation differ from the review question? NO 5. Could the reference standard, its conduct, or its interpretation have introduced bias? NO - 6. Is there concern that the target condition as defined by the reference standard does not match the review question? NO – all patients had biopsy confirmed CD diagnosis 7. Could the patient flow have introduced bias? NO – all patients had
	- Overall risk of bias: low - Patient parents filled out forms on their behalf, however this was deemed to have a

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– Bibliographic reference	– Rashid (2005): Celiac disease: Evaluation of the diagnosis and dietary compliance in Canadian children
	low impact overall on the bias of the study
– Number of patients	– N= 168 children < 16 yrs old
– location	– Canada
– Patient characteristics	<p>– Inclusion criteria: Survey was sent to all (n=5240) members of the Canadian celiac association. 3408 responded, and of these, 194 were children under 16 years/ 168/194 had biopsy-confirmed CD and were included in the study,</p> <p>– Exclusion criteria: respondents >16 years of age or without biopsy confirmation of diagnosis</p> <p>– Mean age: 9 yeas (2-15)</p> <p>– Mean age at diagnosis: 5 years (1-15)</p>
– Signs and symptoms	<p>– Abdominal pain and gas – 90%</p> <p>– Weight loss – 71%</p> <p>– Poor growth – 70%</p> <p>– Diarrhoea – 65%</p> <p>– Nausea and vomiting – 53%</p> <p>– Anaemia - 40%</p>
– Investigations	<p>– Questionnaire</p> <ul style="list-style-type: none"> • Developed by canadian celiac association in collaboration with dept of epidemiology and medicine University of Ottawa. • 76 questions on demographics, clinical symptoms prior to diagnosis, associated disorders, family history • Series of celiac-specific questions about well-being and lifestyle • Members of CCA professional advisory board and 2 international experts on CD reviewed content of survey • Parents completing questionnaire on behalf of child asked to involve child in answering questions as much as possible <p>–</p>
– Length of follow up	– N/A
– Outcome	<ul style="list-style-type: none"> • <u>Resolution of symptoms</u> • <u>Patient experience</u> • Complications of cd

– Bibliographic reference	– Rashid (2005): Celiac disease: Evaluation of the diagnosis and dietary compliance in Canadian children
	<ul style="list-style-type: none"> • Adherence • <u>Health related quality of life</u> • Impact on carers
– Results	<ul style="list-style-type: none"> – Adherence <ul style="list-style-type: none"> • 95% strict adherers • 4% felt could be healthy without gluten in diet (“% all the time / 2% most of time) – Resolution of symptoms <ul style="list-style-type: none"> • After starting diet, 89% noted a significant improvement in health • Accidental consumption triggered reaction in 54% of children – Patient experience / health related QoL <ul style="list-style-type: none"> • 13% felt left out of activities at school or friends’ homes • 18% felt different from other kids at school because of CD • 23% felt embarrassed to bring GF food to birthday parties • 23% felt angry about having to follow a special diet • 11% felt that their teachers and friends did not understand • 52% avoided restaurant • 15% avoided travelling • 28% found it difficult to buy GF foods at stores • 27% found it difficult to determine if food was GF from label • 10% felt they were not invited out for meals because of CD • 13% worried about staying in hospital because of CD
– Source of funding	–
– Comments	
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