

## Guideline topic: Assessment, diagnosis and clinical interventions for children and young people with ASD

### General comments:

### Search coverage

#### Patient searches

Databases covered:	Dates covered:
Caredata	1996 – April 2004
Cinahl	1996 – April 2004
Embase	1996 – April 2004
Medline	1996 – April 2004
Psychinfo	1996 – April 2004
Social Work Abstracts	1988 – April 2004
Total hits:673	Sifted result:65

#### Guidelines

GIN Web site	Embase (last 5 years)
National Guidelines Clearinghouse	Medline (last 5 years)
NeLH Guidelines Finder	
NICE Web site	
Total hits:	
Guidelines evaluated using AGREE instrument:	

#### Systematic reviews

Databases covered: Medline, Embase, Cinahl, PsycInfo, Cochrane	Dates covered: 1996-2004
Total hits:	Pre-Sifted result: 71

#### RCTs:

Behavioural:

Diet

Drug: this strategy covers KQ 16, 18 and 21

Early Intervention

Databases covered:	Dates covered:
CINAHL	1996 - 2004
CCTR	
Embase	
Medline	
Psychinfo	

<p><i>Total hits:</i></p> <p>Behavioural:</p> <p>Diet: 69</p> <p>Drug: 208</p> <p>Early Intervention: 17</p>	<p><i>Pre-Sifted result:</i></p> <p>Behavioural: 101</p> <p>Diet: 16</p> <p>Drug: 103</p> <p>Early Intervention: 16</p>
<p><b>Observational studies</b></p> <p><i>Behavioural:</i></p> <p><i>Diet:</i></p> <p><i>Drug:</i></p> <p><i>Databases covered: Medline, Embase, Cinahl, PsycInfo, Cochrane</i>      <i>Dates covered: 1996-2005</i></p> <p><i>Total hits:</i></p> <p>Behavioural:</p> <p>Diet: 43</p> <p>Drugs: 484</p>	
<p><i>Pre-Sifted result:</i></p> <p>Behavioural: 89</p> <p>Diet: 26</p> <p>Drugs: 78</p>	
<p><b>Diagnostic studies:</b></p> <p><i>Diagnosis : KQ6</i></p> <p><i>Databases covered: Medline, Embase, Cinahl, PsycInfo, Cochrane</i>      <i>Dates covered:1996-2005</i></p> <p><i>Total hits:149</i></p>	
<p><i>Pre-Sifted result: 58</i></p>	
<p><b>No Filter: This refers to searches that were not limited to any particular study type.</b></p> <p><i>Databases covered: Medline, Embase, Cinahl, PsycInfo, Cochrane</i>      <i>Dates covered: 1996-2005</i></p>	

<b>Total hits:</b>	<b>Pre-Sifted result:</b>
KQ12: Comorbid Conditions: 367	KQ12: Comorbid Conditions: 150
Gillberg & Szatmari criteria: 90	Gillberg & Szatmari criteria: 3
KQ4: Age Factors: 4546	KQ4: Age Factors: 91
KQ7: Parent Information: 230	KQ7: Parent Information: 76
KQ9: Training for Professionals: 40	KQ9: Training for Professionals 17
KQ10: Multi-Agency Teams: 13	KQ10: Multi-Agency Teams 13
KQ13: Assess. and diagnosis 1270	KQ13: Assess. and diagnosis
KQ14: Prognosis 160	KQ14: Prognosis 44
KQ1,5,8: 537	KQ1,5,8: 192
MRI_EEG: 1428	MRI_EEG: 171
KQ 5&6: Diagnosis 2308	KQ 5&6: Diagnosis 275
KQ22 Service Delivery: 2828	KQ22 Service Delivery: 89
<p><b>Supplementary searches:</b> An extra search was requested in September 2005 on 'Investigations'. A search was conducted for systematic reviews, RCTs and Observational papers</p> <p>Databases covered: Medline, Embase, Cinahl, Psycinfo Dates covered: 2000-2005 and Cochrane</p>	
<i>Total hits:</i>	<i>Sifted result:</i>
<i>Systematic Revs:</i>	
<i>RCTs:</i>	
<i>Observationals:</i>	

The following are listings of the main Medline strategies used for this guideline. All conventions and symbols are from the Ovid implementation of Medline. Strategies used in other databases were substantially the same, though different terminology may have been used to take account of different thesaurii used in non-Medline databases.

Search filters were added to identify studies of a particular type (guideline, systematic review, etc.) Listings of the search filters used by SIGN can be found on the SIGN Web site.

### **Core Strategy**

This search strategy was used in the search for guidelines and systematic reviews, and will form the core strategy for identification of patient groups in all subsequent searches.

This listing uses the Ovid implementation of Medline.

- Lines ending in / are Medical Subject Heading (MeSH) terms. These will be changed in other databases to take account of the use of different thesauri.
- The \$ symbol represents truncation. Autis\$ will find autism, or autistic. Asperger\$ will find asperger, aspergers, asperger's, etc.
- Items surrounded by dots look at specific fields: .mp. looks at all the key text fields; .ti. looks in the title; .ab. the abstract.

1. Autistic Disorder/
2. Child Development Disorders, Pervasive/
3. Asperger Syndrome/
4. autism spectrum disorder\$.mp.
5. autistic spectrum disorder\$.mp.
6. pervasive developmental disorder\$.mp.
7. asd.mp.
8. pdd.mp.
- 9 pdd-nos.mp.
- 10 autis\$.ti,ab.
- 11 asperger\$.ti,ab.
- 12 kanner.ti,ab.
- 13 Childhood autism.mp.
- 14 Childhood schizophrenia/
- 15 Childhood psychosis.mp.
- 16 Autistic disorder.mp.
- 17 Rett syndrome/
- 18 Rett\$2 disorder.mp.
- 19 or/1-18

**KQ4: Age Factors – combined with core stem**

1. exp Age Factors/
2. (age\$ or month\$ or year\$ or young\$).ti.
3. exp child/ or exp infant/
4. exp Early Diagnosis/
5. or/1-4

**Diagnosis Strategy (KQ6)**

*This first section identifies the range of tests/instruments of interest. This is the Medline version. Other databases vary in detail (e.g. Embase is more focused, Psychinfo uses more generic terms)*

1. autism behavio?r checklist.mp.
2. autistic diagnostic interview.mp.
3. adi.mp.
4. adi-r.mp.
5. autism screening questionnaire.mp.
6. "diagnostic interview for social communication".mp.
7. disco.mp.
8. autism diagnostic observation schedule.mp.
9. ados.mp.
10. childhood autism rating scale.mp.
11. childhood asperger syndrome test.mp.

12. autism spectrum quotient.mp.
13. asperger syndrome screening questionnaire.mp.
14. assq.mp.
15. gillam autism rating scale.mp.
16. gars.mp.
17. "pervasive developmental disorders - mental retardation".mp.
18. pdd-mr.mp.
19. asdi.mp.
20. "Asperger Syndrome (and high-functioning autism) Diagnostic Interview".mp.
21. australian scale for asperger syndrome.mp.
22. asas.mp.
23. wing autistic disorder interview checklist.mp.
24. prutting pragmatic profile.mp.
25. wechler test\$.mp.
26. wppsi.mp.
27. wisc.mp.
28. merril?-palmer.mp.
29. ravens cpm.mp.
30. leiter.mp.
31. leiter-r.mp.
32. Kaufman Assessment Battery for Children.mp.
33. k-abc.mp.
34. vineland adaptive behavior scale\$.mp.
35. griffith scale\$.mp.
36. bayley scale\$.mp.
37. Stanford-Binet Intelligence Scale.mp.
38. mccarthy scale\$.mp.
39. basii.mp.
40. mullen scale\$.mp.
41. psycho-educational profile revised.mp.
42. pep-r.mp.
43. autistic continuum.mp.
44. british picture vocabulary scale.mp.
45. reynell developmental language scale\$.mp.
46. derbyshire language scheme.mp.
47. child communication checklist.mp.
48. clinical evaluation of language fundamentals.mp.
49. celf.mp.
50. renfrew language scale\$.mp.
51. test of reception of grammar.mp.
52. symbolic play test.mp.
53. test of pretend play.mp.
54. "social use of language program\$.mp.

55. "pragmatic\$ profile of early communication skills in children".mp.
56. understanding ambiguity.mp.
57. theory of mind stor\$.mp.
58. gesture test.mp.
59. spatial assessment.mp.
60. (visual perception adj2 assessment).mp.
61. play assessment.mp.
62. school function assessment.mp.
63. "school based assessment of motor".mp.
64. macarthur communication development inventory.mp.
65. pre?school language scale\$.mp.
66. sensory motor profile.mp.
67. happe stor\$.mp.
68. happe.mp.
69. movement abc test.mp.
70. strange stories test.mp.
71. or/1-70

*The last section identifies papers on ASD, and is standard for all searches. Again, this section differs in detail for other databases but is essentially the same.*

72. Autistic Disorder/
73. Child Development Disorders, Pervasive/
74. Asperger Syndrome/
75. autism spectrum disorder\$.mp.
76. autistic spectrum disorder\$.mp.
77. pervasive developmental disorder\$.mp.
78. asd.mp.
79. pdd.mp.
80. autis\$.ti,ab.
81. asperger\$.ti,ab.
82. kanner.ti,ab.
83. or/72-82

### **KQ7: Parent Information**

1. Autistic Disorder/
2. Child Development Disorders, Pervasive/
3. Asperger Syndrome/
4. autism spectrum disorder\$.mp.
5. autistic spectrum disorder\$.mp.
6. pervasive developmental disorder\$.mp.
7. asd.mp.
8. pdd.mp.
9. autis\$.ti,ab.
10. asperger\$.ti,ab.
11. kanner.ti,ab.
12. or/1-11

13. genetic counseling/
14. counseling/ or pastoral care/
15. Patient-Centered Care/
16. patient information.mp.
17. (information adj2 patient\$).mp.
18. (information adj 2 carer\$).mp.
19. (information adj2 parent\$).mp.
20. social support/
21. Self-Help Groups/
22. educational support.mp.
23. or/13-22
24. 12 and 23

### **KQ9: Training for Professionals – combined with core stem**

1. exp education, premedical/ or exp education, professional/ or exp inservice training/ or exp students, health occupations/
2. (medical adj2 student\$).tw.
3. ((personnel\$ or staff\$ or student\$ or nurs\$ or clinician\$ or profess\$) adj2 (train\$ or educat\$)).tw.
4. or/1-3

### **KQ10: Multi-Agency Teams**

1. Autistic Disorder/
2. Child Development Disorders, Pervasive/
3. Asperger Syndrome/
4. autism spectrum disorder\$.mp.
5. autistic spectrum disorder\$.mp.
6. pervasive developmental disorder\$.mp.
7. asd.mp.
8. pdd.mp.
9. autis\$.ti,ab.
10. asperger\$.ti,ab.
11. kanner.ti,ab.
12. or/1-11
13. multi-disciplinary assessment.mp.
14. multidisciplinary.tw.
15. multiagency.tw.
16. joint working.tw.
17. inter-agency.tw.
18. "Delivery of Health Care, Integrated"/
19. integrated working.tw.
20. or/13-19
21. 12 and 20

### **KQ13: Assessment**

1. Autistic Disorder/
2. Child Development Disorders, Pervasive/
3. Asperger Syndrome/
4. autism spectrum disorder\$.mp.
5. autistic spectrum disorder\$.mp.
6. pervasive developmental disorder\$.mp.

7. asd.mp.
8. pdd.mp.
9. autism\$.ti,ab.
10. asperger\$.ti,ab.
11. kanner.ti,ab.
12. or/1-11
13. exp "Outcome and Process Assessment (Health Care)"/
14. Personality Assessment/
15. multi-disciplinary assessment.mp.
16. Patient Care Planning/
17. Patient Care Team/
18. multi-agency assessment.mp.
19. Medical History Taking/
20. clinical history.mp.
21. exp Physical Examination/
22. exp Child Development/
23. exp personality development/
24. exp Communication Disorders/
25. Educational Measurement/
26. communication skill\$.mp.
27. exp social behavior/
28. social functioning.mp.
29. social skill\$.mp.
30. socialization.mp.
31. direct observation.mp.
32. "Play and Playthings"/
33. play-based assessment.mp.
34. interpersonal relations/
35. social interaction.mp.
36. neurocognitive assessment.mp.
37. Neuropsychological Tests/
38. functional skills assessment.mp.
39. "Activities of Daily Living"/
40. or/13-39
41. 12 and 40
42. limit 41 to "all child (0 to 18 years)"

#### **Drugs Strategy (KQ 16, 18 and 21)**

- 1 Autistic Disorder/ (3203)
- 2 Child Development Disorders, Pervasive/ (395)
- 3 Asperger Syndrome/ (313)
- 4 autism spectrum disorder\$.mp. (212)
- 5 autistic spectrum disorder\$.mp. (192)
- 6 pervasive developmental disorder\$.mp. (436)
- 7 asd.mp. (876)
- 8 pdd.mp. (432)
- 9 autism\$.ti,ab. (3460)
- 10 asperger\$.ti,ab. (374)
- 11 kanner.ti,ab. (19)

12 or/1-11 (5252)  
13 exp Anti-Bacterial Agents/ (86660)  
14 exp Anticonvulsants/ (27767)  
15 carbamazepine/ (2078)  
16 Valproic Acid/ (2383)  
17 sodium valproate.mp. (485)  
18 exp Antidepressive Agents/ (23899)  
19 atomoxetine.mp. (68)  
20 exp Serotonin Uptake Inhibitors/ (9808)  
21 fluoxetine/ (2544)  
22 fluvoxamine/ (722)  
23 paroxetine/ (1479)  
24 sertraline/ (1007)  
25 venlafaxine.mp. (968)  
26 amitriptyline/ (767)  
27 clomipramine/ (600)  
28 desipramine/ (733)  
29 Imipramine/ (1067)  
30 exp Antiemetics/ (26886)  
31 chlorpromazine/ (731)  
32 exp Antifungal Agents/ (36500)  
33 exp Analgesics/tu [Therapeutic Use] (26038)  
34 exp Antipsychotic Agents/ (17974)  
35 olanzapine.mp. (2182)  
36 quetiapine.mp. (760)  
37 Risperidone/ (1874)  
38 exp Antiviral Agents/ (81955)  
39 Acyclovir/ (2036)  
40 Haloperidol/ (2796)  
41 exp cathartics/ (2475)  
42 laxatives.mp. (472)  
43 lithium/ (2462)  
44 Methylphenidate/ (1079)  
45 ritalin.mp. (156)  
46 melatonin/ (4651)  
47 naltrexone/ (1817)  
48 nystatin/ (434)  
49 exp Narcotic Antagonists/ (6064)  
50 pimizide/ (146)  
51 exp Central Nervous System Stimulants/ (16076)  
52 psychostimulant\$.mp. (1144)  
53 Dextroamphetamine/ (738)  
54 secretin/ (565)

- 55 sertraline/ (1007)
- 56 exp STEROIDS/ (124187)
- 57 or/13-56 (411745)
- 58 12 and 57 (525)

#### **MRI EEG – requested May 2005**

- 1. Autistic Disorder/
- 2. Child Development Disorders, Pervasive/
- 3. Asperger Syndrome/
- 4. autism spectrum disorder\$.mp.
- 5. autistic spectrum disorder\$.mp.
- 6. pervasive developmental disorder\$.mp.
- 7. asd.mp.
- 8. pdd.mp.
- 9. autis\$.ti,ab.
- 10. asperger\$.ti,ab.
- 11. kanner.ti,ab.
- 12. or/1-11
- 13. exp Magnetic Resonance Imaging/
- 14. MRI.tw.
- 15. (magnet\$ adj3 reson\$).tw.
- 16. tomograph\$.tw.
- 17. exp ELECTROENCEPHALOGRAPHY/
- 18. (eeg or encephalo\$ or electrocortico\$ or stereoelectroenceph\$).tw.
- 19. electroencephalo\$.tw.
- 20. ((alpha\$ or beta\$ or delta\$ or theta\$) adj2 rhythm\$).tw.
- 21. (cortical adj2 (synchroni\$ or desynchron\$)).tw.
- 22. or/13-21
- 23. 12 and 22
- 24. limit 23 to (humans and yr = 1996-2005)

#### **Behavioural Intervention Stem**

- 1. Autistic Disorder/
- 2. Child Development Disorders, Pervasive/
- 3. Asperger Syndrome/
- 4. autism spectrum disorder\$.mp.
- 5. autistic spectrum disorder\$.mp.
- 6. pervasive developmental disorder\$.mp.
- 7. asd.mp.
- 8. pdd.mp.
- 9. autis\$.ti,ab.
- 10. asperger\$.ti,ab.
- 11. kanner.ti,ab.
- 12. or/1-11
- 13. "circle of friends".mp.
- 14. object attachment/
- 15. holding therapy.mp.
- 16. exp Behavior Therapy/
- 17. anger management.mp.
- 18. lovaas.mp.

19. aba.mp.
20. applied behavior analysis.mp.
21. self awareness training.mp.
22. Verbal Behavior/
23. augmentative communication.mp.
24. british sign language.mp.
25. child's talk.mp.
26. communication intervention.mp.
27. facilitated communication.mp.
28. "light and sound".mp.
29. makaton.mp.
30. picture exchange communication system.mp.
31. pecs.mp.
32. sign language/
33. signed English.mp.
34. social communication training.mp.
35. Speech Therapy/
36. talking mat\$.mp.
37. teacch.mp.
38. communication methods, total/
39. visual language.mp.
40. virtual reality.mp.
41. Computer Simulation/
42. exp Cetacea/
43. homeopathy/
44. art therapy/ or music therapy/ or occupational therapy/
45. auditory integration therapy.mp.
46. tomatis method.mp.
47. early bird.mp.
48. earlybird.mp.
49. hanen parent program\$.mp.
50. portage.mp.
51. heavy metal chelation.mp.
52. exp metals, heavy/ and chelation.mp.
53. movement program\$.mp.
54. Exercise/
55. Psychotherapy/
56. Autogenic Training/
57. Cognitive Therapy/
58. exp Desensitization, Psychologic/
59. group therapy/
60. social skills training.mp.
61. socialization/
62. daily life therapy.mp.
63. developmental skills.mp.
64. sexual health.mp.
65. social stories.mp.
66. social interaction training.mp.
67. spirals.kw.
68. brain gym.mp.
69. ddat.mp.
70. gentle teaching.mp.

71. growing minds.mp.
72. intensive interaction.mp.
73. peer mediated intervention.mp.
74. precision teaching.mp.
75. sensory integration therapy.mp.
76. sunrise.mp.
77. spell.kw.
78. theory of mind.mp.
79. visual therapy.mp.
80. colorimetric therapy.mp.
81. irlen.mp.
82. Orthoptics/
83. or/13-82
84. 12 and 83

### **Diet Stem**

1. Autistic Disorder/
2. Child Development Disorders, Pervasive/
3. Asperger Syndrome/
4. autism spectrum disorder\$.mp.
5. autistic spectrum disorder\$.mp.
6. pervasive developmental disorder\$.mp.
7. asd.mp.
8. pdd.mp.
9. autis\$.ti,ab.
10. asperger\$.ti,ab.
11. kanner.ti,ab.
12. or/1-11
13. exp Amino Acids/
14. exp Dietary Supplements/
15. nutritional supplement\$.mp.
16. enzymaid.mp.
17. exp Enzymes/ad, ae, tu, to [Administration & Dosage, Adverse Effects, Therapeutic Use, Toxicity]
18. evening primrose oil.mp.
19. eye-q.mp.
20. exp Dietary Proteins/
21. protein supplement\$.mp.
22. dimethylglyoxime.mp.
23. exp Fatty Acids/
24. exp Fatty Acids, Essential/
25. highly unsaturated fatty acid\$.mp.
26. hufa.mp.
27. exp Fatty Acids, Omega-3/
28. exp Fatty Acids, Volatile/
29. exp Glycyrrhiza/
30. licorice.mp.
31. liquorice.mp.
32. magnesium/
33. manganese/
34. additive free diet.mp.
35. exp Food Additives/

36. exp food preservatives/
37. exp antioxidants/
38. exclusion diet.mp.
39. Caseins/
40. casein free diet.mp.
41. gluten free diet.mp.
42. low salicylate diet.mp.
43. exp salicylates/
44. low sugar diet.mp.
45. Dietary Sucrose/
46. molecular diet.mp.
47. orthomolecular diet.mp.
48. yeast free diet.mp.
49. exp Vitamin B 6/
50. exp Ascorbic Acid/
51. vitamin c.mp.
52. or/13-51
53. 12 and 52

### **Early Intervention Stem**

1. Autistic Disorder/
2. Child Development Disorders, Pervasive/
3. Asperger Syndrome/
4. autism spectrum disorder\$.mp.
5. autistic spectrum disorder\$.mp.
6. pervasive developmental disorder\$.mp.
7. asd.mp.
8. pdd.mp.
9. autis\$.ti,ab.
10. asperger\$.ti,ab.
11. kanner.ti,ab.
12. or/1-11
13. "Early Intervention (Education)"/
14. 12 and 13
15. limit 14 to (humans and abstracts and "all child (0 to 18 years)" and yr = 1996 - 2005)

### **Screening**

1. Autistic Disorder/
2. Child Development Disorders, Pervasive/
3. Asperger Syndrome/
4. autism spectrum disorder\$.mp.
5. autistic spectrum disorder\$.mp.
6. pervasive developmental disorder\$.mp.
7. asd.mp.
8. pdd.mp.
9. autis\$.ti,ab.
10. asperger\$.ti,ab.
11. kanner.ti,ab.
12. or/1-11
13. \*mass screening/ or \*genetic screening/ or \*neonatal screening/

14. high risk.mp.
15. \*risk factors/
16. predisposition.mp.
17. exp \*Disease Susceptibility/
18. \*early diagnosis/
19. exp \*Parent-Child Relations/
20. exp \*Population Surveillance/
21. or/13-20
22. 12 and 21

#### **KQ22: Service Delivery**

1. exp "Delivery of Health Care"/
2. ((health care or healthcare) adj2 (delivery or system\$ or service\$ or model)).tw.
3. exp Health Services Administration/
4. (MDT or multidisciplinary\$).tw.
5. or/1-4
6. exp Autistic Disorder/
7. exp Child Development Disorders, Pervasive/
8. exp Asperger Syndrome/
9. autis\$.tw.
10. (asd or pdd).tw.
11. asperger\$.tw.
12. kanner.tw.
13. or/6-12
14. 5 and 13
15. limit 14 to yr=1996 - 2005

#### **Supplementary Search: Investigations – combined with main stem**

1. exp Child Development Disorders, Pervasive/et [Etiology]
2. exp Autistic Disorder/et [Etiology]
3. exp Asperger Syndrome/et [Etiology]
4. exp Lactates/
5. (lactat\$ or lactic\$).tw.
6. exp Glycine/
7. exp Hematology/
8. (haematolo\$ or hematolo\$).tw.
9. ("u&e\$" or "u & e\$" or "u and e\$" or "urea\$ and electrolyte\$").tw.
10. exp Liver Function Tests/
11. (LFT\$ or liver func\$ test\$).tw.
12. exp Proteins/
13. (protein\$ or albumin\$ or globulin\$).tw.
14. exp CALCIUM/
15. calcium\$.tw.
16. exp Phosphates/
17. phosphate\$.tw.
18. exp Uric Acid/
19. (uric\$ or urate\$).tw.
20. exp GLUCOSE/
21. glucose\$.tw.
22. exp Triglycerides/
23. (triglycer\$ or triacylglyce\$).tw.
24. exp Cholesterol/

25. cholesterol\$.tw.
26. exp Acyl-CoA Dehydrogenase, Long-Chain/
27. exp Iron/
28. TIBC.tw.
29. iron\$.tw.
30. exp Anemia/
31. anemi\$.tw.
32. RoN.tw.
33. exp Receptor Protein-Tyrosine Kinases/
34. exp immunoglobulin a/ or exp immunoglobulin g/ or exp immunoglobulin m/
35. (IgA or IgG or IgM or Immunoglobulin\$.tw.
36. exp C-Reactive Protein/
37. c-reactive protein\$.tw.
38. exp ZINC/
39. zinc\$.tw.
40. exp Vitamin B 12/
41. (vit\$ adj2 (B12 or B 12)).tw.
42. exp Ferritin/
43. ferritin\$.tw.
44. exp Folic Acid/
45. exp vitamin b deficiency/ or exp folic acid deficiency/
46. (folate\$ or folic\$).tw.
47. exp Lymph Nodes/
48. (lymph\$ adj3 count\$).tw.
49. exp antigens, cd3/ or antigens, cd4/ or antigens, cd8/ or antigens, cd19/
50. exp Receptors, IgG/
51. (CD3 or CD4 or CD8 or CD19 or CD16).tw.
52. (CD 3 or CD 4 or CD 8 or CD 19 or CD 16).tw.
53. exp Immunoglobulin E/
54. IgE.tw.
55. exp Celiac Disease/
56. ((celiac\$ or coeliac\$) adj3 (screen\$ or sprue\$ or disease\$)).tw.
57. (gluten\$ adj3 sensit\$).tw.
58. "stool culture".tw.
59. exp Feces/
60. (feces or faeces\$ or fecal or faecal or stool\$).tw.
61. exp Clostridium/
62. clostrid\$.tw.
63. exp Parasitic Diseases/
64. parasit\$.tw.
65. organic acid\$.tw.
66. urin\$.tw.
67. exp Glycolysis/
68. glycolysis\$.tw.
69. exp Amino Acids/
70. amino acid\$.tw.
71. metabolite\$.tw.
72. exp Fatty Acids/
73. fatty acid\$.tw.
74. exp Yeasts/

75. exp Candida/
76. (yeast\$ or candida\$.tw.
77. fungal\$.tw.
78. exp Bacterial Infections/
79. bacterial\$.tw.
80. exp bacteria/ or exp fungi/
81. exp Citric Acid Cycle/
82. ((kreb\$ or citric acid\$) adj2 cycle).tw.
83. exp Neurotransmitters/
84. (neurotransmitter\$ or neurohormon\$ or neuromodulat\$ or neuroregulat\$.tw.
85. exp Pyrimidines/
86. pyrimidine\$.tw.
87. Uric Acid/
88. uric acid\$.tw.
89. exp Hematologic Tests/
90. ("indolyl-3-acryloyl glycine" or IAG).tw.
91. red cell\$.tw.
92. vitamin\$.tw.
93. (plasma adj2 (sulphate\$ or sulfate\$)).tw.
94. (sulphite\$ or sulfite\$.tw.
95. exp MAGNESIUM/
96. magnesium\$.tw.
97. exp COPPER/
98. copper\$.tw.
99. exp CHROMIUM/
100. chromium\$.tw.
101. exp MANGANESE/
102. manganese\$.tw.
103. exp Trace Elements/
104. (hair or tooth or teeth or dental).tw.
105. exp lead poisoning/ or exp manganese poisoning/
106. lead\$.tw.
107. exp MERCURY POISONING/ or exp MERCURY/
108. exp CADMIUM POISONING/ or exp CADMIUM/
109. exp Aluminum/
110. (mercury\$ or cadmium\$ or aluminium\$.tw.
111. (selenium\$ or metallothionene\$.tw.
112. exp Metals, Heavy/
113. exp risk factors/
114. prenatal exposure delayed effects/
115. or/1-114

**part 2: some extra terms were searched for – results combined with previous search**

1. exp SELENIUM/
2. selenium\$.tw.
3. exp Opioid Peptides/
4. ((opiod\$ or opiate\$) adj2 (peptide\$ or endogenous)).tw.
5. (dynorphin\$ or endorphin\$ or enkephalin\$.tw.
6. exp Nitric Oxide/
7. nitric oxide.tw.
8. (nitrogen\$ adj2 (monoxide\$ or protoxide\$)).tw.
9. exp Fatty Acids/

10. exp Dietary Fats, Unsaturated/
11. fatty acid\$.tw.
12. (hufa or pufa or omega\$).tw.
13. exp immunologic factors/ or exp antigen-antibody complex/
14. immuno\$.tw.
15. ((antigen\$ or antibod\$) adj3 complex\$).tw.
16. sulpha\$.tw.
17. exp Candida/
18. (candida\$ or monilia\$ or torulopsis\$).tw.
19. exp Malabsorption Syndromes/
20. (malabsorp\$ or lactose intol\$ or short bowel\$ or sprue\$ or steatorrhea\$ or whipple\$).tw.
21. exp Vitamin B 6/
22. (vit\$ adj2 (b6 or b 6)).tw.
23. exp Measles virus/
24. exp Measles/
25. measles\$.tw.
26. exp measles vaccine/ or exp measles-mumps-rubella vaccine/ or exp mumps vaccine/ or exp rubella vaccine/
27. mmr\$.tw.
28. exp Hair/
29. or/1-28