**Search Strategy Methodology**

The searches for this systematic review to prepare the guideline were run using the OvidSP search platform to search the following databases: MEDLINE, EMBASE and PsycINFO; the EBSCOHost search platform to search the following database CINAHL and ProQuest search platform to search the following database ProQuest Dissertations & Theses Global. The final update of all search strategies was run on February 26, 2015. A total of 114,251 references were retrieved on general needle fear, paediatric or adult population subjects. All references were saved in an EndNote library used to identify the **32,155** duplicates. A total of **138** references were retrieved manually from various sources (e.g. reference lists, personal communications, etc.). The authors screened the remaining **82,234** unique references (search results and manually found references) in the Endnote library against the inclusion criteria.

The following tables record the search strategies and terms used to search each of the databases.

**MEDLINE:**

The search strategy for OvidSP MEDLINE (1946 to February Week 4 2015) retrieved a total of **34,297** unique references not duplicated in our other searches. A combination of Medical Subject Headings (MeSH) descriptors and free text terms were used.

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| --- | --- | --- |
| Set | History | Comments |
| 1 | (((needle or injection\* or shot or shots or immuniz\* or immunis\* or vaccinat\*) adj2 (fear or fears or anxiety or anxious)) or (trypanophobia\* or belonephobia\*)).ti,ab. | Needle fear Textword terms |
| 2 | needles/ and (fear/ or anxiety/) | Needle fear subject terms |
| 3 | 1 or 2 | GENERAL needle fear results |
| 4 | fear/ or panic/ or anxiety/ or dental anxiety/ or memory/ or Crying/ or stress, psychological/ or Phobic disorders/ or Phobia, Specific/ or Pain Measurement/ or Pain/ or patient compliance/ or patient dropouts/ or treatment refusal/ or (fear\* or fright\* or panic\* or anxiou\* or anxiet\* or pain or pains or pained or painful\* or crying or cries or cry or phobic or phobia\* or discomfort\* or distress\* or prefer or prefers or preferred or preference or anxiolytic\* or anxiolysis or (needle adj2 (fear\* or trauma\*))).ti,ab. or patient satisfaction/ or attitude/ or attitude of health personnel/ or syncope, vasovagal/ or (unpleasant\* or faint\* or dizzy or restrain\* or ((cannula\* or procedure\*) adj2 (attempt\* or success\* or duration\*)) or refus\* or avoid\* or rememb\* or recall or recalls or recalled or recalling or cooperat\*).ti,ab. or (cope or copes or coping).ti,ab. or Clinical Competence/ or interpersonal relations/ or professional-family relations/ or exp professional-patient relations/ or "Quality of Life"/ or (qol or (quality adj2 life)).ti,ab. or self efficacy/ or (trypanophobia\* or belonephobia\*).ti,ab. or Facial Expression/ or ((facial adj5 express\*) or grimace\*).ti,ab. | Outcome Terms |
| 5 | syringes/ or catheters/ or catheters, indwelling/ or "needle-free injection\*".ti,ab. or (needle adj2 free adj2 injection\*).ti,ab. or (Buzzy or Shotblocker or (shot adj2 blocker\*) or (jet adj2 injector\*) or "J-tip" or iontophoresis or Lidosite or Numby).ti,ab. or ((ultrasound or laser) adj2 local adj2 anesthetic adj2 delivery).ti,ab. or (Zingo or Sonoprep).ti,ab. or (Epiture adj2 Easytouch).ti,ab. or (Powder adj2 Intradermal adj2 Injection).ti,ab. or "order of injection\*".ti,ab. or "method of injection\*".ti,ab. or ((needle\* or inject\* or vaccinat\*) adj2 (technique\* or technic\* or aspirat\* or angle\* or speed\* or slow\* or rapid\* or order\* or length or thick\* or angle\* or gauge\* or size\*)).ti,ab. or ((operator\* or phlebotomist\* or nurse\* or clinician\* or doctor\*) adj2 (technical or technique\* or skill\*)).ti,ab. or exp Emergency Medical Services/ or mass immunization/ or exp blood specimen collection/ or phlebotomy/ or needles/ or injections/ or injections, intramuscular/ or injections, subcutaneous/ or injections, intradermal/ or injections, jet/ or drug administration routes/ or administration, intravenous/ or injections, intravenous/ or (venipuncture\* or ((venous or intravenous\* or iv) adj5 (insert\* or cannula\* or cathet\*)) or shot or shots).ti,ab. or immunization/ or immunization, passive/ or exp Vaccines/ad or vaccination/ or ((needle\* or inject\* or painful) adj2 procedur\*).ti,ab. | Needle Terms |
| 6 | 4 and 5 | Base clinical set 1- paediatric |
| 7 | limit 6 to "all child (0 to 18 years)" | Age group limit |
| 8 | infan\* or neonat\* or child\* or adolescen\* or teen\* or girl\* or boy\* or youth\* or tot or tots or toddler\* or paediatric\* or pediatric\*).mp. | Age group Textword search terms |
| 9 | 7 or (6 and 8) | FINAL Results Paediatric |
| 10 | ("injection\* phobia\*" or (injection\* adj2 phobia\*) or "blood injury fear\*" or "blood-injury fear\*" or "blood injury phobia\*" or aichmophobia\* or enetophobia\*).ti,ab. or \*syringes/ or \*catheters/ or \*catheters, indwelling/ or "needle-free injection\*".ti,ab. or (needle adj2 free adj2 injection\*).ti,ab. or (Buzzy or Shotblocker or (shot adj2 blocker\*) or (jet adj2 injector\*) or "J-tip" or iontophoresis or Lidosite or Numby).ti,ab. or ((ultrasound or laser) adj2 local adj2 anesthetic adj2 delivery).ti,ab. or (Zingo or Sonoprep).ti,ab. or (Epiture adj2 Easytouch).ti,ab. or (Powder adj2 Intradermal adj2 Injection).ti,ab. or "order of injection\*".ti,ab. or "method of injection\*".ti,ab. or ((needle\* or inject\* or vaccinat\*) adj2 (technique\* or technic\* or aspirat\* or angle\* or speed\* or slow\* or rapid\* or order\* or length or thick\* or angle\* or gauge\* or size\*)).ti,ab. or ((operator\* or phlebotomist\* or nurse\* or clinician\* or doctor\*) adj2 (technical or technique\* or skill\*)).ti,ab. or exp \*Emergency Medical Services/ or \*mass immunization/ or exp \*blood specimen collection/ or \*phlebotomy/ or \*needles/ or \*injections/ or \*injections, intramuscular/ or \*injections, subcutaneous/ or \*injections, intradermal/ or \*injections, jet/ or \*drug administration routes/ or \*administration, intravenous/ or \*injections, intravenous/ or (venipuncture\* or ((venous or intravenous\* or iv) adj5 (insert\* or cannula\* or cathet\*)) or shot or shots).ti,ab. or \*immunization/ or \*immunization, passive/ or exp \*Vaccines/ad or \*vaccination/ or ((needle\* or inject\* or painful) adj2 procedur\*).ti,ab. | Needle Terms (focused) |
| 11 | \*dental clinics/ or \*dental offices/ or ((dental or dentist\*) adj2 office\*).ti,ab. or (public adj2 health adj2 clinic\*).ti,ab. or \*fear/ or \*panic/ or \*anxiety/ or \*dental anxiety/ or \*memory/ or \*Crying/ or \*stress, psychological/ or \*Phobic disorders/ or \*Phobia, Specific/ or Pain Measurement/ or Pain/ or \*patient compliance/ or \*patient dropouts/ or \*treatment refusal/ or (fear\* or fright\* or panic\* or anxiou\* or anxiet\* or pain or pains or pained or painful\* or crying or cries or cry or phobic or phobia\* or discomfort\* or distress\* or prefer or prefers or preferred or preference or anxiolytic\* or anxiolysis or (needle adj2 (fear\* or trauma\*))).ti,ab. or \*patient satisfaction/ or \*attitude/ or \*attitude of health personnel/ or \*syncope, vasovagal/ or (unpleasant\* or faint\* or dizzy or restrain\* or ((cannula\* or procedure\*) adj2 (attempt\* or success\* or duration\*)) or refus\* or avoid\* or rememb\* or recall or recalls or recalled or recalling or cooperat\*).ti,ab. or (cope or copes or coping).ti,ab. or \*Clinical Competence/ or \*interpersonal relations/ or \*professional-family relations/ or exp \*professional-patient relations/ or "\*Quality of Life"/ or (qol or (quality adj2 life)).ti,ab. or \*self efficacy/ or (trypanophobia\* or belonephobia\*).ti,ab. or \*Facial Expression/ or ((facial adj5 express\*) or grimace\*).ti,ab. | Outcome Terms (focused) |
| 12 | 10 and 11 | Base clinical set 2 – Adult |
| 13 | limit 12 to ("adult (19 to 44 years)" or "middle age (45 to 64 years)" or "all aged (65 and over)" or "aged (80 and over)") | Adult Age Group limit |
| 14 | 12 not (9 or 13) | No age group specified |
| 15 | 13 or 14 | All Adult results |
| 16 | limit 15 to humans | FINAL Adult group |

**EMBASE**

The search strategy for OvidSP Embase Classic+Embase <1947 to 2015 Week 08> retrieved a total of **33,358** unique references not duplicated in our other searches. A combination of EMBASE descriptor and free text terms were used.

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| --- | --- | --- |
| Set | History | Comments |
| 1 | (((needle or injection\* or shot or shots or immuniz\* or immunis\* or vaccinat\*) adj2 (fear or fears or anxiety or anxious)) or (trypanophobia\* or belonephobia\*)).ti,ab. | Needle fear Textword terms |
| 2 | needle/ or bevel needle/ or dental needle/ or hypodermic needle/ or microneedle/ or syringe needle/) | Need terms |
| 3 | fear/ or anticipatory anxiety/ or anxiety/ or dental anxiety/ | Fear subject terms |
| 4 | 1or (2 and 3) | GENERAL needle fear results |
| 5 | fear/ or anticipatory anxiety/ or anxiety/ or dental anxiety/ or memory/ or associative memory/ or episodic memory/ or explicit memory/ or long term memory/ or procedural memory/ or recall/ or recognition/ or retrospective memory/ or short term memory/ or verbal memory/ or visual memory/ or nonverbal communication/ or crying/ or facial expression/ or gesture/ or mental stress/ or stress/ or anxiety disorder/ or anxiety neurosis/ or catastrophizing/ or distress syndrome/ or panic/ or phobia/ or pain assessment/ or pain/ or application site pain/ or arm pain/ or injection pain/ or injection site pain/ or nociceptive pain/ or psychogenic pain/ or skin pain/ or patient compliance/ or patient attitude/ or (patient adj2 dropout\*).mp. or treatment refusal/ or (fear\* or fright\* or panic\* or anxiou\* or anxiet\* or pain or pains or pained or painful\* or crying or cries or cry or phobic or phobia\* or discomfort\* or distress\* or prefer or prefers or preferred or preference or anxiolytic\* or anxiolysis or (needle adj2 (fear\* or trauma\*))).ti,ab. or patient satisfaction/ or attitude/ or attitude to health/ or faintness/ or hyperventilation syndrome/ or presyncope/ or cannula/ or "catheters and tubes"/ or (unpleasant\* or faint\* or dizzy or restrain\* or ((cannula\* or procedure\*) adj2 (attempt\* or success\* or duration\*)) or refus\* or avoid\* or rememb\* or recall or recalls or recalled or recalling or cooperat\*).ti,ab. or (cope or copes or coping).ti,ab. or competence/ or clinical competence/ or nursing competence/ or professional competence/ or human relation/ or doctor nurse relation/ or doctor patient relation/ or nurse patient relationship/ or exp "quality of life"/ or (qol or (quality adj2 life)).ti,ab. or ((self adj2 efficacy) or "self-efficacy").ti,ab. or (trypanophobia\* or belonephobia\*).ti,ab. or nonverbal communication/ or facial expression/ or gesture/ or ((facial adj5 express\*) or grimace\*).ti,ab | Outcome Terms |
| 6 | needle/ or dental needle/ or hypodermic needle/ or microneedle/ or syringe needle/ or catheter/ or "catheters and tubes"/ or exp indwelling catheter/ or injection/ or injection site/ or jet injection/ or microinjection/ or self injection/ or "needle-free injection\*".ti,ab. or (needle adj2 free adj2 injection\*).ti,ab. or puncture/ or vein puncture/ or (Buzzy or Shotblocker or (shot adj2 blocker\*) or (jet adj2 injector\*) or "J-tip" or iontophoresis or Lidosite or Numby).ti,ab. or ((ultrasound or laser) adj2 local adj2 anesthetic adj2 delivery).ti,ab. or (Zingo or Sonoprep).ti,ab. or (Epiture adj2 Easytouch).ti,ab. or (Powder adj2 Intradermal adj2 Injection).ti,ab. or "order of injection\*".ti,ab. or "method of injection\*".ti,ab. or ((needle\* or inject\* or vaccinat\*) adj2 (technique\* or technic\* or aspirat\* or angle\* or speed\* or slow\* or rapid\* or order\* or length or thick\* or angle\* or gauge\* or size\*)).ti,ab. or ((operator\* or phlebotomist\* or nurse\* or clinician\* or doctor\*) adj2 (technical or technique\* or skill\*)).ti,ab. or emergency health service/ or emergency medicine/ or emergency ward/ or immunization/ or mass immunization/ or active immunization/ or passive immunization/ or vaccination/ or bcg vaccination/ or influenza vaccination/ or measles vaccination/ or revaccination/ or hematological procedure/ or blood donor/ or blood sampling/ or cannulation/ or vascular access/ or repeat procedure/ or phlebotomy/ or drug administration route/ or intradermal drug administration/ or intramuscular drug administration/ or intranasal drug administration/ or intravenous drug administration/ or subcutaneous drug administration/ or topical drug administration/ or (venipuncture\* or ((venous or intravenous\* or iv) adj5 (insert\* or cannula\* or cathet\*)) or shot or shots).ti,ab. or exp vaccine/ad, ar, dl, im, na, iv, sc, tp or vaccination reaction/ or ((needle\* or inject\* or painful) adj2 procedur\*).ti,ab. or ("injection\* phobia\*" or (injection\* adj2 phobia\*) or "blood injury fear\*" or "blood-injury fear\*" or "blood injury phobia\*" or aichmophobia\* or enetophobia\*).ti,ab. | Needle Terms |
| 7 | 5 and 6 | Base clinical set 1 – paediatric |
| 8 | limit 7 to (infant <to one year> or child <unspecified age> or preschool child <1 to 6 years> or school child <7 to 12 years> or adolescent <13 to 17 years>) | Age group limit |
| 9 | (infan\* or neonat\* or child\* or adolescen\* or teen\* or girl\* or boy\* or youth\* or tot or tots or toddler\* or paediatric\* or pediatric\*).mp.  | Age group Textword search terms |
| 10 | 8 or (7 and 9) | Paediatric age group results |
| 11 | limit 10 to (medline or conference abstract or conference paper or conference proceeding or "conference review" or editorial or letter) | Publication type limit |
| 12 | 10 not 11 | Final age group results excluding pub type |
| 13 | 12 not 4 | FINAL Results Paediatric |
| 14 | \*needle/ or \*dental needle/ or \*hypodermic needle/ or \*microneedle/ or \*syringe needle/ or \*catheter/ or "\*catheters and tubes"/ or exp \*indwelling catheter/ or \*injection/ or \*injection site/ or \*jet injection/ or \*microinjection/ or \*self injection/ or "needle-free injection\*".ti,ab. or (needle adj2 free adj2 injection\*).ti,ab. or \*puncture/ or \*vein puncture/ or (Buzzy or Shotblocker or (shot adj2 blocker\*) or (jet adj2 injector\*) or "J-tip" or iontophoresis or Lidosite or Numby).ti,ab. or ((ultrasound or laser) adj2 local adj2 anesthetic adj2 delivery).ti,ab. or (Zingo or Sonoprep).ti,ab. or (Epiture adj2 Easytouch).ti,ab. or (Powder adj2 Intradermal adj2 Injection).ti,ab. or "order of injection\*".ti,ab. or "method of injection\*".ti,ab. or ((needle\* or inject\* or vaccinat\*) adj2 (technique\* or technic\* or aspirat\* or angle\* or speed\* or slow\* or rapid\* or order\* or length or thick\* or angle\* or gauge\* or size\*)).ti,ab. or ((operator\* or phlebotomist\* or nurse\* or clinician\* or doctor\*) adj2 (technical or technique\* or skill\*)).ti,ab. or \*emergency health service/ or \*emergency medicine/ or \*emergency ward/ or \*immunization/ or \*mass immunization/ or \*active immunization/ or \*passive immunization/ or \*vaccination/ or \*bcg vaccination/ or \*influenza vaccination/ or \*measles vaccination/ or \*revaccination/ or \*hematological procedure/ or \*blood donor/ or \*blood sampling/ or \*cannulation/ or \*vascular access/ or \*repeat procedure/ or \*phlebotomy/ or \*drug administration route/ or \*intradermal drug administration/ or \*intramuscular drug administration/ or \*intranasal drug administration/ or \*intravenous drug administration/ or \*subcutaneous drug administration/ or \*topical drug administration/ or (venipuncture\* or ((venous or intravenous\* or iv) adj5 (insert\* or cannula\* or cathet\*)) or shot or shots).ti,ab. or exp \*vaccine/ad, ar, dl, im, na, iv, sc, tp or \*vaccination reaction/ or ((needle\* or inject\* or painful) adj2 procedur\*).ti,ab. or ("injection\* phobia\*" or (injection\* adj2 phobia\*) or "blood injury fear\*" or "blood-injury fear\*" or "blood injury phobia\*" or aichmophobia\* or enetophobia\*).ti,ab. | Needle Terms (Focused) |
| 15 | \*fear/ or \*anticipatory anxiety/ or \*anxiety/ or \*dental anxiety/ or \*memory/ or \*associative memory/ or \*episodic memory/ or \*explicit memory/ or \*long term memory/ or \*procedural memory/ or \*recall/ or \*recognition/ or \*retrospective memory/ or \*short term memory/ or \*verbal memory/ or \*visual memory/ or \*nonverbal communication/ or \*crying/ or \*facial expression/ or \*gesture/ or \*mental stress/ or \*stress/ or \*anxiety disorder/ or \*anxiety neurosis/ or \*catastrophizing/ or \*distress syndrome/ or \*panic/ or \*phobia/ or pain assessment/ or pain/ or application site pain/ or \*arm pain/ or injection pain/ or injection site pain/ or \*nociceptive pain/ or \*psychogenic pain/ or \*skin pain/ or \*patient compliance/ or \*patient attitude/ or (patient adj2 dropout\*).mp. or \*treatment refusal/ or (fear\* or fright\* or panic\* or anxiou\* or anxiet\* or pain or pains or pained or painful\* or crying or cries or cry or phobic or phobia\* or discomfort\* or distress\* or prefer or prefers or preferred or preference or anxiolytic\* or anxiolysis or (needle adj2 (fear\* or trauma\*))).ti,ab. or \*patient satisfaction/ or \*attitude/ or \*attitude to health/ or \*faintness/ or \*hyperventilation syndrome/ or \*presyncope/ or (unpleasant\* or faint\* or dizzy or restrain\* or ((cannula\* or procedure\*) adj2 (attempt\* or success\* or duration\*)) or refus\* or avoid\* or rememb\* or recall or recalls or recalled or recalling or cooperat\*).ti,ab. or (cope or copes or coping).ti,ab. or \*competence/ or \*clinical competence/ or \*nursing competence/ or \*professional competence/ or \*human relation/ or \*doctor nurse relation/ or \*doctor patient relation/ or \*nurse patient relationship/ or exp "\*quality of life"/ or (qol or (quality adj2 life)).ti,ab. or ((self adj2 efficacy) or "self-efficacy").ti,ab. or (trypanophobia\* or belonephobia\*).ti,ab. or \*nonverbal communication/ or \*facial expression/ or \*gesture/ or ((facial adj5 express\*) or grimace\*).ti,ab. | Outcome Terms (focused) |
| 16 | 14 and 15 | Base clinical set 2 - adult |
| 17 | limit 16 to (adult <18 to 64 years> or aged <65+ years>) | Adult Age Group limit |
| 18 | 16 not (17 or 13) | No age group specified |
| 19 | 17 or 18 | All Adult results |
| 20 | limit 19 to human | FINAL Adult group results |

**PsycINFO**

The search strategy for OvidSP PsycINFO <1806 to February Week 4 2015>, retrieved a total of **8,227** unique references not duplicated in our other searches. A combination of PsycINFO descriptor and free text terms were used.

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| --- | --- | --- |
| Set | History | Comments |
| 1 | (((needle or injection\* or shot or shots or immuniz\* or immunis\* or vaccinat\*) adj2 (fear or fears or anxiety or anxious)) or (trypanophobia\* or belonephobia\*)).mp.  | Needle fear Textword terms |
| 2 | needle\*.mp. and (fear/ or emotional states/ or panic/ or anxiety/ or anxiety sensitivity/ or conditioned fear/ or panic attack/ or exp phobias/ or social anxiety/ or stranger reactions/)  | Needle fear subject terms |
| 3 | 1or 2 and 3 | GENERAL needle fear results |
| 4 | exp emotional responses/ or emotion recognition/ or facial expressions/ or grimaces/ or smiles/ or memory/ or early memories/ or episodic memory/ or long term memory/ or reminiscence/ or repressed memory/ or retrospective memory/ or short term memory/ or exp verbal memory/ or exp visual memory/ or emotional states/ or emotions/ or exp anxiety/ or exp aversion/ or disgust/ or dissatisfaction/ or distress/ or emotional trauma/ or exp fear/ or exp helplessness/ or hopelessness/ or restlessness/ or suffering/ or emotional disturbances/ or irritability/ or learned helplessness/ or exp "quality of life"/ or (professional adj2 family adj2 relation\*).mp. or interpersonal relationships/ or exp interpersonal interaction/ or competence/ or (vasovagal adj2 syncope\*).mp. or syncope/ or health personnel attitudes/ or attitudes/ or health attitudes/ or exp parental attitudes/ or psychologist attitudes/ or attitude formation/ or attitude measurement/ or client attitudes/ or client satisfaction/ or treatment compliance/ or client participation/ or treatment barriers/ or treatment dropouts/ or treatment refusal/ or pain measurement/ or exp pain/ or pain management/ or exp pain perception/ or pain thresholds/ or fear/ or panic/ or anxiety/ or dental anxiety/ or memory/ or Crying/ or stress, psychological/ or Phobic disorders/ or Phobia, Specific/ or Pain Measurement/ or Pain/ or patient compliance/ or patient dropouts/ or treatment refusal/ or (fear\* or fright\* or panic\* or anxiou\* or anxiet\* or pain or pains or pained or painful\* or crying or cries or cry or phobic or phobia\* or discomfort\* or distress\* or prefer or prefers or preferred or preference or anxiolytic\* or anxiolysis or (needle adj2 (fear\* or trauma\*))).ti,ab. or patient satisfaction/ or attitude/ or attitude of health personnel/ or syncope, vasovagal/ or (unpleasant\* or faint\* or dizzy or restrain\* or ((cannula\* or procedure\*) adj2 (attempt\* or success\* or duration\*)) or refus\* or avoid\* or rememb\* or recall or recalls or recalled or recalling or cooperat\*).ti,ab. or (cope or copes or coping).ti,ab. or Clinical Competence/ or interpersonal relations/ or professional-family relations/ or exp professional-patient relations/ or "Quality of Life"/ or (qol or (quality adj2 life)).ti,ab. or ((self adj2 efficacy) or "self-efficacy").ti,ab. or nonverbal communication/ or body language/ or eye contact/ or gestures/  | Outcome terms |
| 5 | ((blood adj2 specimen\* adj2 collect\*) or phlebotom\* or (blood adj2 (taking or drawing)) or needle\* or venipuncture\* or ((venous or intravenous\* or iv) adj5 (insert\* or cannula\* or cathet\*)) or shot or shots or ((needle\* or inject\* or painful) adj2 procedur\*) or vaccinat\* or immuniz\* or vaccine\*).mp. or immunization/ or influenza/ or rubella/ or measles/ or exp injections/ or catheterization/ or (Buzzy or Shotblocker or (shot adj2 blocker\*) or (jet adj2 injector\*) or "J-tip" or iontophoresis or Lidosite or Numby or ((ultrasound or laser) adj2 local adj2 anesthetic adj2 delivery) or (Zingo or Sonoprep) or (Epiture adj2 Easytouch) or (Powder adj2 Intradermal adj2 Injection) or "order of injection\*" or "method of injection\*" or ((needle\* or inject\* or vaccinat\*) adj2 (technique\* or technic\* or aspirat\* or angle\* or speed\* or slow\* or rapid\* or order\* or length or thick\* or angle\* or gauge\* or size\*)) or ((operator\* or phlebotomist\* or nurse\* or clinician\* or doctor\*) adj2 (technical or technique\* or skill\*))).ti,ab. or emergency services/ or drug administration methods/ or (venipuncture\* or ((venous or intravenous\* or iv) adj5 (insert\* or cannula\* or cathet\*)) or shot or shots).ti,ab. or ((needle\* or inject\* or painful) adj2 procedur\*).ti,ab. or ("injection\* phobia\*" or (injection\* adj2 phobia\*) or "blood injury fear\*" or "blood-injury fear\*" or "blood injury phobia\*" or aichmophobia\* or enetophobia\*).ti,ab. | Needle Terms |
| 6 | 4 and 5 | Base clinical set 1 – paediatric |
| 7 | limit 6 to (100 childhood <birth to age 12 yrs> or 200 adolescence <age 13 to 17 yrs>) | Age group limit |
| 8 | (infan\* or neonat\* or child\* or adolescen\* or teen\* or girl\* or boy\* or youth\* or tot or tots or toddler\* or paediatric\* or pediatric\*).mp. | Age group Textword search terms |
| 9 | 7 or (6 and 8) | FINALResults Paediatric |
| 10 | 6 not 9 | FINAL Results Adult  |

**CINAHL**

The search strategy for EBSCOHost CINAHL <1983 to February 26, 2015>, retrieved a total of **5566** unique references not duplicated in our other searches. A combination of CINAHL descriptor and free text terms were used.

|  |  |  |
| --- | --- | --- |
| Set | History | Comments |
| S1 | TX ((needle OR injection\* OR shot OR shots OR immuniz\* OR immunis\* OR vaccinat\*) N2 (fear OR fears OR anxiety OR anxious)) or TX (trypanophobia\* OR belonephobia\*) or TX ("injection\* phobia\*" OR (injection\* N2 phobia\*) OR "blood injury fear\*" OR "blood-injury fear\*" OR "blood injury phobia\*" OR aichmophobia\* OR enetophobia\*)  | Needle fear Textword terms |
| S2 | (MH "Needles") OR (MH "Biopsy, Needle")  | Need terms |
| S3 | (MH "Fear") OR (MH "Dental Anxiety") OR (MH "Anxiety") OR (MH "Anticipatory Anxiety") | Fear subject terms |
| S4 | TX ("injection\* phobia\*" OR (injection\* N2 phobia\*) OR "blood injury fear\*" OR "blood-injury fear\*" OR "blood injury phobia\*" OR aichmophobia\* OR enetophobia\*) | Needle fear textword terms |
| S5 | S1 OR (S2 AND S3) or S4 | GENERAL needle fear results |
| S6 | (MH "Fear") OR (MH "Dental Anxiety") OR (MH "Anxiety") OR (MH "Anticipatory Anxiety") OR (MH "Memory") OR (MH "Memory, Short Term") OR (MH "Crying") OR (MH "Facial Expression") OR (MH "Body Language") OR (MH "Stress, Psychological") OR (MH "Phobic Disorders") OR (MH "Panic Disorder") OR (MH "Pain") OR (MH "Nociceptive Pain") OR (MH "Pain Measurement") OR (MH "Patient Compliance") OR (MH "Treatment Refusal") OR (MH "Patient Satisfaction") OR (MH "Patient Dropouts") OR (MH "Attitude") OR (MH "Attitude of Health Personnel") OR (MH "Nurse Attitudes") OR (MH "Pharmacist Attitudes") OR (MH "Physician Attitudes") OR (MH "Syncope, Vasovagal") OR (MH "Clinical Competence") OR (MH "Nursing Skills") OR (MH "Interpersonal Relations") OR (MH "Professional-Family Relations") OR (MH "Professional-Patient Relations+") OR (MH "Quality of Life") OR (MH "Comfort") OR (MH "Self-Efficacy") OR TX (fear\* OR fright\* OR panic\* OR anxiou\* OR anxiet\* OR pain OR pains OR pained OR painful\* OR crying OR cries OR cry OR phobic OR phobia\* OR discomfort\* OR distress\* OR prefer OR prefers OR preferred OR preference OR anxiolytic\* OR anxiolysis OR (needle N2 (fear\* OR trauma\*))) OR TX (((cannula\* OR procedure\*) N2 (attempt\* OR success\* OR duration\*)) OR refus\* OR avoid\* OR rememb\* OR recall OR recalls OR recalled OR recalling OR cooperat\* OR cope OR copes OR coping) OR TX (qol OR (quality N2 life)) OR TX (trypanophobia\* OR belonephobia\* OR (facial N5 express\*) OR grimace\*) | Outcome Terms |
| S7 | TX ("needle-free injection\*" OR (needle N2 free N2 injection\*) OR Buzzy OR Shotblocker OR (shot N2 blocker\*) OR (jet N2 injector\*) OR "J-tip" OR iontophoresis OR Lidosite OR Numby OR ((ultrasound or laser) N2 local N2 anesthetic N2 delivery) OR Zingo OR Sonoprep OR (Epiture N2 Easytouch) OR (Powder N2 Intradermal N2 Injection) OR "order of injection\*" OR "method of injection\*" OR ((needle\* OR inject\* OR vaccinat\*) N2 (technique\* OR technic\* OR aspirat\* OR angle\* OR speed\* OR slow\* OR rapid\* OR order\* OR length OR thick\* OR angle\* OR gauge\* OR size\*)) OR ((operator\* OR phlebotomist\* OR nurse\* OR clinician\* OR doctor\*) N2 (technical OR technique\* OR skill\*))) OR MM "Syringes") OR (MM "Catheters") OR (MM "Gastrojejunostomy Tubes") OR (MM "Gastrostomy Tubes") OR (MM "Jejunostomy Tubes") OR (MM "Nasoenteral Tubes") OR (MM "Feeding Tubes") OR (MM "Emergency Medical Services+") OR (MM "Immunization") OR (MM "Blood Specimen Collection+") OR (MM "Venipuncture") OR (MM "Phlebotomy") OR (MM "Needles") OR (MM "Injections") OR (MM "Injection Sites") OR (MM "Injections, Intramuscular") OR (MM "Z-Track Injection") OR (MM "Injections, Subcutaneous") OR (MM "Injections, Jet") OR (MM "Injections, Intradermal") OR (MM "Drug Administration Routes") OR (MM "Administration, Intravenous") OR (MM "Immunization Programs") OR (MM "Vaccines+/AD") | Needle Terms |
| S8 | S6 AND S7 | Base clinical set 1 |
| S9 | S6 AND S7 Narrow by SubjectAge: - all child  | FINAL Results Paediatric |
| S10 | S6 AND S7 Narrow by SubjectAge: - all adult  | Adult age group limit |
| S11 | S6 AND S7 Narrow by SubjectAge: - middle aged: 45-64 years  | Adult age group limit |
| S12 | S6 AND S7 Narrow by SubjectAge: - aged: 65+ years  | Adult age group limit |
| S13 | S10 OR S11 OR S12  | Adult Age group limit |
| S14 | S8 NOT (S5 or S13) | No age group specified |
| S15 | S13 OR S14 | FINAL Results Adult |

**ProQuest Dissertations & Theses Global**

The search strategy for ProQuest Dissertations & Theses Global February 26, 2015, retrieved a total of **351** unique references not duplicated in our other searches. A combination of free text terms were used.

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| Set | History | Comments |
| 1 | all(fear of needles OR needle fear OR (fear and needles)) AND all((vaccin\* OR immuniz\* OR immunis\*)) AND all(child\* OR infan\* OR adolescen\* OR teen\* OR Pediatric\* OR Paediatric\*) |  |
| 2 | all(fear of needles OR needle fear OR (fear and needles)) AND all((procedure\* OR catheter\*)) AND all(child\* OR infan\* OR adolescen\* OR teen\* OR Pediatric\* OR Paediatric\*) |  |
| 3 | all(distress) AND all((procedure\* OR catheter\*)) AND all(child\* OR infan\* OR adolescen\* OR teen\* OR Pediatric\* OR Paediatric\*) |  |
| 4 | all(distress) AND all((vaccin\*\* OR Immuniz\* OR immunis\*)) AND all(child\* OR infan\* OR adolescen\* OR teen\* OR Pediatric\* OR Paediatric\*) |  |
| 5 | all(anxiety OR anxious\*) AND all((vaccin\* OR Immuniz\*)) AND all(child\* OR infan\* OR adolescen\* OR teen\* OR Pediatric\* OR Paediatric\*) |  |
| 6 | Or/1-5 | FINAL Results All age groups |