**Appendix**

**Search Strategy**

Ovid

Database(s): Embase 1988 to 2015 Week 14, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) 1946 to Present, EBM Reviews - Cochrane Central Register of Controlled Trials April 2015   
Search Strategy:

|  |  |  |
| --- | --- | --- |
| **#** | **Searches** | **Results** |
| 1 | exp Transgendered Persons/ | 657 |
| 2 | exp Transsexualism/ | 5673 |
| 3 | exp Sex Reassignment Procedures/ | 603 |
| 4 | (((sex\* or gender) adj (transition\* or transform\* or reassign\* or chang\*)) or ((trans or intersex) adj (sexual\* or gender\* or male or men or women or female or people or person\*)) or (cross adj (sex\* or gender\*)) or (trans adj gender\*) or crossgender\* or transexual\* or transgender\* or transpeople or transperson or transsexual\*).mp. | 14582 |
| 5 | 1 or 2 or 3 or 4 | 14582 |
| 6 | exp Gonadal Steroid Hormones/ | 502961 |
| 7 | exp Estrogens/ | 316721 |
| 8 | exp Androgens/ | 195398 |
| 9 | exp Progestins/ | 164719 |
| 10 | exp Androgen Antagonists/ | 52432 |
| 11 | exp Estrogen Antagonists/ | 100937 |
| 12 | exp Hormone Replacement Therapy/ | 66351 |
| 13 | (acetomepregenol or adrenosterone\* or aethinyltestosteron\* or aethisteron\* or alestramustine or algestone\* or allylestrenol\* or almestrone\* or altrenogest or amafolone\* or "anabolic agent\*" or "anabolic drug\*" or "anabolic steroid\*" or "anabolizing agent\*" or "anabolizing cream\*" or "anabolizing drug\*" or "anabolizing treatment\*" or androgen\* or androstan or Androstane or androstanediol\* or androstanedione\* or androstanolone\* or androstene or androstenediol\* or Androstenedione\* or androsterone\* or Androsterone\*\* or anhydrohydroxyprogesterone\* or anhydroxyprogesterone\* or anordiol\* or anordrin or atromid or avaden or bazedoxifene or benorterone\* or bolandiol\* or bolasterone\* or boldenone or boldione or broparestrol\* or calusterone\* or chlormadinone or chlorotrianisene or chlorotrianisine or chlorotrianizene or chlorotris or chlortrianisene or chlortrianisoestrolum or chlortrianizen or clorestrolo or clorotrisin or clostebol or colutoid or conovid or convaden or corlutin or corlutina or corluvite or coumestrol or cyproterone or danazol or Dehydroepiandrosterone\* or dehydrogesterone\* or dehydroprogesterone\* or dehydroretroprogesterone\* or demegestone\* or "deoxyestradiol sulfate" or deposiston or desogestrel or dexatopic or "dexnorgestrel acetime" or diarylpropionitrile or dienestrol\* or dienogest or diethylstilbestrol\* or diethylstilboestrol\* or dihydroequilin or Dihydroprogesterone\* or Dihydrotestosterone\* or dimethisteron\* or dimethisterone\* or dimethysterone\* or drospirenone\* or drostanolone\* or dufaston or duphaston or duvaron or dydrogesterone\* or elcometrine or eltanolone\* or enidrel or enobosarm or Epitestosterone\* or Equilenin or Equilin or Estetrol\* or esthisterone\* or Estradiol\* or estramustine or estregur or Estriol\* or Estrogen\* or Estrone\* or ethinone or ethinylestradiol or ethinyltestosterone\* or ethisterone\* or ethylestrenol\* or ethynyltestosterone\* or Etiocholanolone\* or etiocholanone\* or etisterona or etonogestrel\* or etynodiol or flavolutan or "flugestone acetate" or flumedroxone or fluoxymesterone\* or fologenon or formebolone or fosfestrol or furazabol or gestaclone or gestagen\* or gestatron or gestoden or gestodene or gestogen\* or gestone or gestonorone\* or gestoral or gestrinone or gestron or gynorest or hexestrol\* or hormone\* or hormonisene or hydrogesterone\* or hydroxyandrostenedione\* or hydroxyestradiol\* or Hydroxyestrone\* or Hydroxypregnenolone\* or Hydroxyprogesterone\* or hydroxytestosterone\* or hydroxytibolone\* or implanon or indenestrol\* or isopregnenone or "kober chromogen" or lasofoxifene or levonorgestrel or "lipo lutin" or lucorteum or lucorteumoral or luditon or lupronex or luteodyn or luteogan or luteohormone\* or "luteo-hormone\*" or luteosan or "luteosterone\* compresse" or lutidon or lutocyclin or lutocyclol or lutocylol or lutogyl or "lutoral assia" or lutral or lutren or lutromone or lynestrenol\* or medrogestone\* or megestrol\* or melengestrol\* or menrium or mepitiostane or merbental or merbentul or mestanolone\* or mesterolone\* or Mestranol or metace or metandienone or metenolone or methallenestril\* or methandriol\* or methestrol\* or methoxyestradiol\* or methoxyestrone or "methoxyphenyl chloroethylene" or methyldienolone\* or methylestrenolone\* or methyltestosterone\* or metribolone\* or mibolerone\* or mirelle or moxestrol\* or nalutoral or nalutron or Nandrolone\* or nexplanon or nomegestrol\* or norboletone or norelgestromin or norethandrolone\* or norethinodrel\* or norethisterone\* or "norethyl norethynodrel\*" or norethynodrel\* or noretinodrel\* or noretynodrel\* or norgestimate or norgestomet or norgestrel\* or norgestrienone\* or norprogesterone\* or nortesterone\* or nortestosterone\* or "nsc 10108" or "nsc 15432" or "nsc 92336" or "nsc 9565" or nsc10108 or nsc15432 or nsc92336 or nsc9565 or oestrogen\* or oestrogene\* or "ora lutin" or oraluton or "orf 10131" or orf10131 or osaterone\* or ospemifene or oxabolone or oxandrolone or oxoandrostenedione or oxotestosterone\* or oxymesterone\* or oxymetholone or "percutacrine luteinique" or phenylnaringenin or phytoestrogen\* or polyestradiol\* or praegninum or pranone or prasterone\* or pregnane or Pregnanediol\* or pregnanedione\* or Pregnanetriol\* or pregneninolon\* or pregneninolone\* or pregneninonol\* or Pregnenolone\* or pregnin or pregnoral or prenylnaringenin or primolut or produxan or progekan or progestab or progestagen\* or "progestational activit\*" or "progestational agent\*" or "progestational drug\*" or "progestative activit\*" or "progestative agent\*" or "progestative drug\*" or progestelet\* or progesterol\* or "progesterona serral" or Progesterone\*\* or progestin\* or progestogen\* or progestoral\* or prolame or prolidon or proligestone\* or prolutol or proluton or promegestone\* or quinbolone\* or quinestradol\* or Quinestrol or retrone or "sc 4642" or sc4642 or secrosteron or segesterone\* or sepranolone or "sex hormone\*" or "sex steroid\*" or "sexual steroid\*" or "sh b 331" or "sh b331" or "shb 331" or stanolone\* or stanozolol\* or stenbolone or stilboestrol or syngesterone\* or syngestro or syngestrotab\* or "syntolutin tablet\*" or tace or tanaproget or terolut or testololactone\* or Testosterone\*\* or tetrahydrogestrinone\* or tetrahydroprogesterone\* or tibolone\* or tosagestin or trenbolone\* or trestolone\* or "tri para anisylchloroethylene" or trianisoestrol\* or trimegestone\* or "tris para anisyl chloroethylene" or "tris para methoxyphenyl chloroethylene" or trisequen\* or trophigil or trosinone\* or zearalanone\* or zearalenone\* or zeranol).mp. | 1638412 |
| 14 | (abiraterone or acefluranol or acolbifene or afimoxifene or anordiol or "anti estrogen\*" or "anti oestrogen\*" or antiandrogen\* or "anti-androgen\*" or antiestrogen\* or antioestrogen\* or arzoxifene or bazedoxifene or bicalutamide or centchroman or clomifene or cyclofenil or cyoctol or cyproterone or dimethylstilbestrol\* or droloxifene or enclomifene or endoxifen or enzalutamide or epimestrol or epitestosterone or ethamoxytriphetol or fispemifene or flutamide or fulvestrant or galeterone or "hydrochlorothiazide plus spironolactone" or hydroxyflutamide or "hydroxyphenyl cyclohexylidenemethane" or hydroxytamoxifen or idoxifene or "inocoterone acetate" or lasofoxifene or lavanducyanin or mepitiostane or methylestrenolone\* or miproxifene or nafoxidine or nilutamide or nitromifene or nortamoxifen or orteronel or osaterone or ospemifene or oxendolone or panomifene or pipendoxifene or raloxifene or rosterolone or sivifene or spironolactone or tamoxifen or tesmilifene or topilutamide or topterone or toremifene or trioxifene or "ws 9659 b" or zanoterone or zindoxifene or zuclomifene).mp. | 165604 |
| 15 | or/6-14 | 1710564 |
| 16 | 5 and 15 | 3338 |
| 17 | exp Cholesterol/ | 333079 |
| 18 | exp Lipid Metabolism Disorders/ | 316743 |
| 19 | exp Lipids/ | 1922861 |
| 20 | exp Triglycerides/ | 185014 |
| 21 | (Azacosterol\* or cholesteremia\* or cholesterin or cholesterin\* or cholesterinemia\* or cholesterol\* or cholesterolemia\* or cholesterolester\* or "cholesteryl ester\*" or dyslipidemia\* or dyslipoproteinemia\* or dythol or dythol\* or epicholesterol\* or HDL or Hydroxycholesterol\* or hypercholesteremia\* or hypercholesterinaemia\* or hypercholesterinemia\* or hypercholesterolaemia\* or hypercholesterolemia\* or hyperlipemia\* or hyperlipidemia\* or hyperlipoproteinemia\* or hypertriglyceridemia\* or hypoalphalipoproteinemia\* or hypobetalipoproteinemia\* or hypocholesteraemia\* or hypocholesteremia\* or hypocholesterolaemia\* or hypocholesterolemia\* or hypolipoproteinemia\* or "insulin resistance syndrome" or Iodocholesterol\* or Ketocholesterol\* or LDL or lipemia\* or lipid\* or lipidemia\* or lipidoses or lipidosis or lipodystroph\* or lipoidosis or lipomatoses or lipomatosis or lipoprotein\* or lipoproteinemia\* or "mckusick 21500" or "medium chain acyl coenzyme A dehydrogenase deficienc\*" or "metabolic syndrome" or Triacetin or triacylglycerol\* or triglyceride\* or Triolein or VLDL or xanthoma\* or xanthomatoses or xanthomatosis).mp. | 1564533 |
| 22 | or/17-21 | 2635606 |
| 23 | exp Bone Density/ | 107412 |
| 24 | exp "Bone and Bones"/ | 925690 |
| 25 | exp bone mass/ | 18514 |
| 26 | exp Fractures, Bone/ | 313651 |
| 27 | (bone or bones or fracture\*).mp. | 1812348 |
| 28 | or/23-27 | 2229602 |
| 29 | exp Stroke/ | 190844 |
| 30 | exp cerebrovascular accident/ | 190844 |
| 31 | exp Cerebrovascular Disorders/ | 652251 |
| 32 | (((cerebral or brain) adj3 (insult or insultus or accident\* or "blood flow disturbance\*" or infarct\* or ischem\* or ischaem\*)) or apoplexia or apoplexy or "cerebral vascular\*" or cerebrovascular\* or "cerebrum vascular\*" or "ischaemic seizure\*" or "ischemic seizure\*" or stroke or strokes).mp. | 761051 |
| 33 | 29 or 30 or 31 or 32 | 978878 |
| 34 | exp Myocardial Infarction/ | 390808 |
| 35 | exp heart infarction/ | 234143 |
| 36 | (("coronary arter\*" adj3 occlusion) or (heart adj2 (infarct\* or necrosis)) or "cardiac infarct\*" or "cardial infarct\*" or "cardiogenic shock" or "dressler syndrome" or "heart attack\*" or "myocardial infarct\*" or "myocardial stunning" or "myocardium infarct\*" or "premonitory infarction sign" or "subendocardial infarct\*").mp. | 504067 |
| 37 | 34 or 35 or 36 | 506066 |
| 38 | exp Venous Thromboembolism/ | 95303 |
| 39 | ("axillary vein thrombos\*" or "chronic lung embolism" or "deep thrombophlebitis" or "deep venous thrombos\*" or "deep venous thrombus" or "effort thrombos\*" or "lung embolism" or "lung embolization" or "lung embolus" or "lung emboly" or "lung microembolism" or "lung microembolization" or "lung microembolus" or "lung thromboembolism" or "May Thurner syndrome" or "Paget Schroetter disease" or "Paget Schroetter syndrome" or "Paget Schrotter disease" or "Paget Schrotter syndrome" or "Paget von Schroetter disease" or "Paget von Schroetter syndrome" or "Paget von Schrotter disease" or "Paget von Schrotter syndrome" or "pulmonary embolism" or "pulmonary embolization" or "pulmonary embolus" or "pulmonary microembolism" or "pulmonary thromboembolic disease" or "pulmonary thromboembolism" or "Schroetter Paget syndrome" or "subclavian vein thrombos\*" or "subclavian venous thrombos\*" or "upper extremity thrombos\*" or "vein thromboembolism\*" or "venous thromboembolism\*" or VTE).mp. | 146453 |
| 40 | 38 or 39 | 161762 |
| 41 | exp mortality/ | 934575 |
| 42 | exp death/ | 560635 |
| 43 | exp survival/ | 663252 |
| 44 | mortality.fs. | 432536 |
| 45 | (surviv\* or death\* or mortalit\* or fatal\*).mp. | 4258993 |
| 46 | or/41-45 | 4461345 |
| 47 | 22 or 28 or 33 or 37 or 40 or 46 | 9653170 |
| 48 | 16 and 47 | 815 |
| 49 | exp controlled study/ | 4679545 |
| 50 | exp Randomized Controlled Trial/ | 739471 |
| 51 | exp triple blind procedure/ | 87 |
| 52 | exp Double-Blind Method/ | 346125 |
| 53 | exp Single-Blind Method/ | 52535 |
| 54 | exp latin square design/ | 289 |
| 55 | exp Placebos/ | 275425 |
| 56 | exp Placebo Effect/ | 7606 |
| 57 | exp comparative study/ | 2484804 |
| 58 | exp Cross-Sectional Studies/ | 328493 |
| 59 | exp Cross-Over Studies/ | 103611 |
| 60 | exp Cohort Studies/ | 1711496 |
| 61 | exp longitudinal study/ | 263967 |
| 62 | exp retrospective study/ | 907234 |
| 63 | exp prospective study/ | 726651 |
| 64 | exp population research/ | 70182 |
| 65 | exp observational study/ | 77932 |
| 66 | exp clinical trial/ | 1764923 |
| 67 | clinical study/ | 59356 |
| 68 | exp Evaluation Studies/ | 218833 |
| 69 | exp quantitative study/ | 6581 |
| 70 | exp validation studies/ | 118925 |
| 71 | exp field study/ | 1730 |
| 72 | in vivo study/ | 202222 |
| 73 | exp panel study/ | 405 |
| 74 | exp Pilot Projects/ | 178347 |
| 75 | exp pilot study/ | 178347 |
| 76 | exp prevention study/ | 2365 |
| 77 | exp replication study/ | 1069 |
| 78 | exp trend study/ | 12459 |
| 79 | exp correlational study/ | 13626 |
| 80 | exp case-control studies/ | 806880 |
| 81 | exp confidence interval/ | 127920 |
| 82 | exp regression analysis/ | 593490 |
| 83 | exp proportional hazards model/ | 101631 |
| 84 | exp multivariate analysis/ | 367125 |
| 85 | ((outcome\* adj (research or assessment\*)) or (control\* adj3 study) or (control\* adj3 trial) or (randomized adj3 study) or (randomized adj3 trial) or (randomised adj3 study) or (randomised adj3 trial) or "pragmatic clinical trial" or (doubl\* adj blind\*) or (doubl\* adj mask\*) or (singl\* adj blind\*) or (singl\* adj mask\*) or (tripl\* adj blind\*) or (tripl\* adj mask\*) or (trebl\* adj blind\*) or (trebl\* adj mask\*) or "latin square" or placebo\* or nocebo\* or random\* or control\* or multivariate or "comparative study" or "comparative survey" or "comparative analysis" or compar\* or (intervention\* adj2 study) or (intervention\* adj2 trial) or "cross-sectional study" or "cross-sectional analysis" or "cross-sectional survey" or "cross-sectional design" or "prevalence study" or "prevalence analysis" or "prevalence survey" or "disease frequency study" or "disease frequency analysis" or "disease frequency survey" or crossover or "cross-over" or cohort\* or longitudinal\* or retrospectiv\* or prospectiv\* or "population study" or "population survey" or "population analysis" or "population research" or "concurrent study" or "concurrent survey" or "concurrent analysis" or "incidence study" or "incidence survey" or "incidence analysis" or (("follow-up" or followup) adj (stud\* or survey or analysis)) or ((observation or observational) adj (study or survey or analysis)) or "case study" or "case series" or "clinical series" or "case studies" or "clinical study" or "clinical trial" or "evaluation study" or "evaluation survey" or "evaluation analysis" or "quantitative study" or "quantitative analys\*" or "numerical study" or "validation study" or "validation survey" or "validation analysis" or "field study" or "field survey" or "field analysis" or "in vivo study" or "in vivo analysis" or "panel study" or "panel survey" or "panel analysis" or "pilot study" or "pilot survey" or "pilot analysis" or "pilot project" or ((prevention or preventive) adj3 (trial or study or analysis or survey)) or "replication study" or "replication analysis " or "replication trial" or "trend study" or "trend survey" or "trend analysis" or ((correlation\* adj2 study) or (correlation\* adj2 analys\*)) or "case control study" or "case base study" or "case referrent study" or "case referent study" or "case referent study" or "case compeer study" or "case comparison study" or "matched case control" or "multicenter study" or "multi-center study" or study or trial or pilot or "odds ratio" or "confidence interval" or "regression analysis" or "least square" or "least squares" or (hazard\* adj (model or analys\* or regression)) or "Cox model" or "Cox multivariate analyses" or "Cox multivariate analysis" or "Cox regression" or "Cox survival analyses" or "Cox survival analysis" or "Cox survival model" or "change analysis").mp,pt. | 22774022 |
| 86 | or/49-85 | 22869100 |
| 87 | 48 and 86 | 540 |
| 88 | 87 not (exp animals/ not exp humans/) | 438 |
| 89 | limit 88 to yr="1980 -Current" | 435 |
| 90 | limit 89 to (editorial or erratum or letter or note or addresses or autobiography or bibliography or biography or comment or dictionary or directory or interactive tutorial or interview or lectures or legal cases or legislation or news or newspaper article or overall or patient education handout or periodical index or portraits or published erratum or video-audio media or webcasts) [Limit not valid in Embase,Ovid MEDLINE(R),Ovid MEDLINE(R) In-Process,CCTR; records were retained] | 6 |
| 91 | 89 not 90 | 429 |
| 92 | limit 91 to ("all infant (birth to 23 months)" or "newborn infant (birth to 1 month)" or "infant (1 to 23 months)" or "preschool child (2 to 5 years)" or "child (6 to 12 years)") [Limit not valid in Embase,CCTR; records were retained] | 326 |
| 93 | limit 92 to (infant or preschool child <1 to 6 years> or school child <7 to 12 years>) [Limit not valid in Ovid MEDLINE(R),Ovid MEDLINE(R) In-Process,CCTR; records were retained] | 9 |
| 94 | limit 93 to ("adolescent (13 to 18 years)" or "young adult (19 to 24 years)" or "adult (19 to 44 years)" or "young adult and adult (19-24 and 19-44)" or "middle age (45 to 64 years)" or "middle aged (45 plus years)" or "all aged (65 and over)" or "aged (80 and over)") [Limit not valid in Embase,CCTR; records were retained] | 8 |
| 95 | limit 94 to (adolescent <13 to 17 years> or adult <18 to 64 years> or aged <65+ years>) [Limit not valid in Ovid MEDLINE(R),Ovid MEDLINE(R) In-Process,CCTR; records were retained] | 7 |
| 96 | 93 not 95 | 2 |
| 97 | 91 not 96 | 427 |
| 98 | remove duplicates from 97 | 331 |

Scopus

1. TITLE-ABS-KEY(((sex\* or gender) W/1 (transition\* or transform\* or reassign\* or chang\*)) or ((trans or intersex) W/1 (sexual\* or gender\* or male or men or women or female or people or person\*)) or (cross W/1 (sex\* or gender\*)) or (trans W/1 gender\*) or crossgender\* or transexual\* or transgender\* or transpeople or transperson or transsexual\*)
2. TITLE-ABS-KEY(acetomepregenol OR adrenosterone\* OR aethinyltestosteron\* OR aethisteron\* OR alestramustine OR algestone\* OR allylestrenol\* OR almestrone\* OR altrenogest OR amafolone\* OR "anabolic agent\*" OR "anabolic drug\*" OR "anabolic steroid\*" OR "anabolizing agent\*" OR "anabolizing cream\*" OR "anabolizing drug\*" OR "anabolizing treatment\*" OR androgen\* OR androstan OR Androstane OR androstanediol\* OR androstanedione\* OR androstanolone\* OR androstene OR androstenediol\* OR Androstenedione\* OR androsterone\* OR Androsterone\*\* OR anhydrohydroxyprogesterone\* OR anhydroxyprogesterone\* OR anordiol\* OR anordrin OR atromid OR avaden OR bazedoxifene OR benorterone\* OR bolandiol\* OR bolasterone\* OR boldenone OR boldione OR broparestrol\* OR calusterone\* OR chlormadinone OR chlorotrianisene OR chlorotrianisine OR chlorotrianizene OR chlorotris OR chlortrianisene OR chlortrianisoestrolum OR chlortrianizen OR clorestrolo OR clorotrisin OR clostebol OR colutoid OR conovid OR convaden OR corlutin OR corlutina OR corluvite OR coumestrol OR cyproterone OR danazol OR Dehydroepiandrosterone\* OR dehydrogesterone\* OR dehydroprogesterone\* OR dehydroretroprogesterone\* OR demegestone\* OR "deoxyestradiol sulfate" OR deposiston OR desogestrel OR dexatopic OR "dexnorgestrel acetime" OR diarylpropionitrile OR dienestrol\* OR dienogest OR diethylstilbestrol\* OR diethylstilboestrol\* OR dihydroequilin OR Dihydroprogesterone\* OR Dihydrotestosterone\* OR dimethisteron\* OR dimethisterone\* OR dimethysterone\* OR drospirenone\* OR drostanolone\* OR dufaston OR duphaston OR duvaron OR dydrogesterone\* OR elcometrine OR eltanolone\* OR enidrel OR enobosarm OR Epitestosterone\* OR Equilenin OR Equilin OR Estetrol\* OR esthisterone\* OR Estradiol\* OR estramustine OR estregur OR Estriol\* OR Estrogen\* OR Estrone\* OR ethinone OR ethinylestradiol OR ethinyltestosterone\* OR ethisterone\* OR ethylestrenol\* OR ethynyltestosterone\* OR Etiocholanolone\* OR etiocholanone\* OR etisterona OR etonogestrel\* OR etynodiol OR flavolutan OR "flugestone acetate" OR flumedroxone OR fluoxymesterone\* OR fologenon OR formebolone OR fosfestrol OR furazabol OR gestaclone OR gestagen\* OR gestatron OR gestoden OR gestodene OR gestogen\* OR gestone OR gestonorone\* OR gestoral OR gestrinone OR gestron OR gynorest OR hexestrol\* OR hormone\* OR hormonisene OR hydrogesterone\* OR hydroxyandrostenedione\* OR hydroxyestradiol\* OR Hydroxyestrone\* OR Hydroxypregnenolone\* OR Hydroxyprogesterone\* OR hydroxytestosterone\* OR hydroxytibolone\* OR implanon OR indenestrol\* OR isopregnenone OR "kober chromogen" OR lasofoxifene OR levonorgestrel OR "lipo lutin" OR lucorteum OR lucorteumoral OR luditon OR lupronex OR luteodyn OR luteogan OR luteohormone\* OR "luteo-hormone\*" OR luteosan OR "luteosterone\* compresse" OR lutidon OR lutocyclin OR lutocyclol OR lutocylol OR lutogyl OR "lutoral assia" OR lutral OR lutren OR lutromone OR lynestrenol\* OR medrogestone\* OR megestrol\* OR melengestrol\* OR menrium OR mepitiostane OR merbental OR merbentul OR mestanolone\* OR mesterolone\* OR Mestranol OR metace OR metandienone OR metenolone OR methallenestril\* OR methandriol\* OR methestrol\* OR methoxyestradiol\* OR methoxyestrone OR "methoxyphenyl chloroethylene" OR methyldienolone\* OR methylestrenolone\* OR methyltestosterone\* OR metribolone\* OR mibolerone\* OR mirelle OR moxestrol\* OR nalutoral OR nalutron OR Nandrolone\* OR nexplanon OR nomegestrol\* OR norboletone OR norelgestromin OR norethandrolone\* OR norethinodrel\* OR norethisterone\* OR "norethyl norethynodrel\*" OR norethynodrel\* OR noretinodrel\* OR noretynodrel\* OR norgestimate OR norgestomet OR norgestrel\* OR norgestrienone\* OR norprogesterone\* OR nortesterone\* OR nortestosterone\* OR "nsc 10108" OR "nsc 15432" OR "nsc 92336" OR "nsc 9565" OR nsc10108 OR nsc15432 OR nsc92336 OR nsc9565 OR oestrogen\* OR oestrogene\* OR "ora lutin" OR oraluton OR "orf 10131" OR orf10131 OR osaterone\* OR ospemifene OR oxabolone OR oxandrolone OR oxoandrostenedione OR oxotestosterone\* OR oxymesterone\* OR oxymetholone OR "percutacrine luteinique" OR phenylnaringenin OR phytoestrogen\* OR polyestradiol\* OR praegninum OR pranone OR prasterone\* OR pregnane OR Pregnanediol\* OR pregnanedione\* OR Pregnanetriol\* OR pregneninolon\* OR pregneninolone\* OR pregneninonol\* OR Pregnenolone\* OR pregnin OR pregnoral OR prenylnaringenin OR primolut OR produxan OR progekan OR progestab OR progestagen\* OR "progestational activit\*" OR "progestational agent\*" OR "progestational drug\*" OR "progestative activit\*" OR "progestative agent\*" OR "progestative drug\*" OR progestelet\* OR progesterol\* OR "progesterona serral" OR Progesterone\*\* OR progestin\* OR progestogen\* OR progestoral\* OR prolame OR prolidon OR proligestone\* OR prolutol OR proluton OR promegestone\* OR quinbolone\* OR quinestradol\* OR Quinestrol OR retrone OR "sc 4642" OR sc4642 OR secrosteron OR segesterone\* OR sepranolone OR "sex hormone\*" OR "sex steroid\*" OR "sexual steroid\*" OR "sh b 331" OR "sh b331" OR "shb 331" OR stanolone\* OR stanozolol\* OR stenbolone OR stilboestrol OR syngesterone\* OR syngestro OR syngestrotab\* OR "syntolutin tablet\*" OR tace OR tanaproget OR terolut OR testololactone\* OR Testosterone\*\* OR tetrahydrogestrinone\* OR tetrahydroprogesterone\* OR tibolone\* OR tosagestin OR trenbolone\* OR trestolone\* OR "tri para anisylchloroethylene" OR trianisoestrol\* OR trimegestone\* OR "tris para anisyl chloroethylene" OR "tris para methoxyphenyl chloroethylene" OR trisequen\* OR trophigil OR trosinone\* OR zearalanone\* OR zearalenone\* OR zeranol)
3. TITLE-ABS-KEY(abiraterone OR acefluranol OR acolbifene OR afimoxifene OR anordiol OR "anti estrogen\*" OR "anti oestrogen\*" OR antiandrogen\* OR "anti-androgen\*" OR antiestrogen\* OR antioestrogen\* OR arzoxifene OR bazedoxifene OR bicalutamide OR centchroman OR clomifene OR cyclofenil OR cyoctol OR cyproterone OR dimethylstilbestrol\* OR droloxifene OR enclomifene OR endoxifen OR enzalutamide OR epimestrol OR epitestosterone OR ethamoxytriphetol OR fispemifene OR flutamide OR fulvestrant OR galeterone OR "hydrochlorothiazide plus spironolactone" OR hydroxyflutamide OR "hydroxyphenyl cyclohexylidenemethane" OR hydroxytamoxifen OR idoxifene OR "inocoterone acetate" OR lasofoxifene OR lavanducyanin OR mepitiostane OR methylestrenolone\* OR miproxifene OR nafoxidine OR nilutamide OR nitromifene OR nortamoxifen OR orteronel OR osaterone OR ospemifene OR oxendolone OR panomifene OR pipendoxifene OR raloxifene OR rosterolone OR sivifene OR spironolactone OR tamoxifen OR tesmilifene OR topilutamide OR topterone OR toremifene OR trioxifene OR "ws 9659 b" OR zanoterone OR zindoxifene OR zuclomifene)
4. 1 and (2 or 3)
5. TITLE-ABS-KEY(Azacosterol\* OR cholesteremia\* OR cholesterin OR cholesterin\* OR cholesterinemia\* OR cholesterol\* OR cholesterolemia\* OR cholesterolester\* OR "cholesteryl ester\*" OR dyslipidemia\* OR dyslipoproteinemia\* OR dythol OR dythol\* OR epicholesterol\* OR HDL OR Hydroxycholesterol\* OR hypercholesteremia\* OR hypercholesterinaemia\* OR hypercholesterinemia\* OR hypercholesterolaemia\* OR hypercholesterolemia\* OR hyperlipemia\* OR hyperlipidemia\* OR hyperlipoproteinemia\* OR hypertriglyceridemia\* OR hypoalphalipoproteinemia\* OR hypobetalipoproteinemia\* OR hypocholesteraemia\* OR hypocholesteremia\* OR hypocholesterolaemia\* OR hypocholesterolemia\* OR hypolipoproteinemia\* OR "insulin resistance syndrome" OR Iodocholesterol\* OR Ketocholesterol\* OR LDL OR lipemia\* OR lipid\* OR lipidemia\* OR lipidoses OR lipidosis OR lipodystroph\* OR lipoidosis OR lipomatoses OR lipomatosis OR lipoprotein\* OR lipoproteinemia\* OR "mckusick 21500" OR "medium chain acyl coenzyme A dehydrogenase deficienc\*" OR "metabolic syndrome" OR Triacetin OR triacylglycerol\* OR triglyceride\* OR Triolein OR VLDL OR xanthoma\* OR xanthomatoses OR xanthomatosis)
6. TITLE-ABS-KEY(("coronary arter\*" W/3 occlusion) OR (heart W/2 (infarct\* or necrosis)) OR "cardiac infarct\*" OR "cardial infarct\*" OR "cardiogenic shock" OR "dressler syndrome" OR "heart attack\*" OR "myocardial infarct\*" OR "myocardial stunning" OR "myocardium infarct\*" OR "premonitory infarction sign" OR "subendocardial infarct\*")
7. TITLE-ABS-KEY(bone OR bones OR fracture\*)
8. TITLE-ABS-KEY("axillary vein thrombos\*" OR "chronic lung embolism" OR "deep thrombophlebitis" OR "deep venous thrombos\*" OR "deep venous thrombus" OR "effort thrombos\*" OR "lung embolism" OR "lung embolization" OR "lung embolus" OR "lung emboly" OR "lung microembolism" OR "lung microembolization" OR "lung microembolus" OR "lung thromboembolism" OR "May Thurner syndrome" OR "Paget Schroetter disease" OR "Paget Schroetter syndrome" OR "Paget Schrotter disease" OR "Paget Schrotter syndrome" OR "Paget von Schroetter disease" OR "Paget von Schroetter syndrome" OR "Paget von Schrotter disease" OR "Paget von Schrotter syndrome" OR "pulmonary embolism" OR "pulmonary embolization" OR "pulmonary embolus" OR "pulmonary microembolism" OR "pulmonary thromboembolic disease" OR "pulmonary thromboembolism" OR "Schroetter Paget syndrome" OR "subclavian vein thrombos\*" OR "subclavian venous thrombos\*" OR "upper extremity thrombos\*" OR "vein thromboembolism\*" OR "venous thromboembolism\*" OR VTE)
9. TITLE-ABS-KEY(surviv\* OR death\* OR mortalit\* OR fatalit\*)
10. TITLE-ABS-KEY(((cerebral or brain) W/3 (insult or insultus or accident\* or "blood flow disturbance\*" or infarct\* or ischem\* or ischaem\*)) or apoplexia or apoplexy or "cerebral vascular\*" or cerebrovascular\* or "cerebrum vascular\*" or "ischaemic seizure\*" or "ischemic seizure\*" or stroke or strokes)
11. 5 or 6 or 7 or 8 or 9 or 10
12. 4 and 11
13. TITLE-ABS-KEY((outcome\* W/1 (research OR assessment\*)) OR (control\* W/3 study) OR (control\* W/3 trial) OR (randomized W/3 study) OR (randomized W/3 trial) OR (randomised W/3 study) OR (randomised W/3 trial) OR "pragmatic clinical trial" OR (doubl\* W/1 blind\*) OR (doubl\* W/1 mask\*) OR (singl\* W/1 blind\*) OR (singl\* W/1 mask\*) OR (tripl\* W/1 blind\*) OR (tripl\* W/1 mask\*) OR (trebl\* W/1 blind\*) OR (trebl\* W/1 mask\*) OR "latin square" OR placebo\* OR nocebo\* OR random\* OR control\* OR multivariate OR "comparative study" OR "comparative survey" OR "comparative analysis" OR compar\* OR (intervention\* W/2 study) OR (intervention\* W/2 trial) OR "cross-sectional study" OR "cross-sectional analysis" OR "cross-sectional survey" OR "cross-sectional design" OR "prevalence study" OR "prevalence analysis" OR "prevalence survey" OR "disease frequency study" OR "disease frequency analysis" OR "disease frequency survey" OR crossover OR "cross-over" OR cohort\* OR longitudinal\* OR retrospectiv\* OR prospectiv\* OR "population study" OR "population survey" OR "population analysis" OR "population research" OR "concurrent study" OR "concurrent survey" OR "concurrent analysis" OR "incidence study" OR "incidence survey" OR "incidence analysis" OR (("follow-up" or followup) W/1 (stud\* or survey or analysis)) OR ((observation or observational) W/1 (study or survey or analysis)) OR "case study" OR "case series" OR "clinical series" OR "case studies" OR "clinical study" OR "clinical trial" OR "evaluation study" OR "evaluation survey" OR "evaluation analysis" OR "quantitative study" OR "quantitative analys\*" OR "numerical study" OR "validation study" OR "validation survey" OR "validation analysis" OR "field study" OR "field survey" OR "field analysis" OR "in vivo study" OR "in vivo analysis" OR "panel study" OR "panel survey" OR "panel analysis" OR "pilot study" OR "pilot survey" OR "pilot analysis" OR "pilot project" OR ((prevention or preventive) W/3 (trial or study or analysis or survey)) OR "replication study" OR "replication analysis " OR "replication trial" OR "trend study" OR "trend survey" OR "trend analysis" OR ((correlation\* W/2 study) OR (correlation\* W/2 analys\*)) OR "case control study" OR "case base study" OR "case referrent study" OR "case referent study" OR "case referent study" OR "case compeer study" OR "case comparison study" OR "matched case control" OR "multicenter study" OR "multi-center study" OR study OR trial OR pilot OR "odds ratio" OR "confidence interval" OR "regression analysis" OR "least square" or "least squares" OR (hazard\* W/1 (model OR analys\* OR regression)) OR "Cox model" OR "Cox multivariate analyses" OR "Cox multivariate analysis" OR "Cox regression" OR "Cox survival analyses" OR "Cox survival analysis" OR "Cox survival model" OR "change analysis")
14. PUBYEAR AFT 1979
15. 12 and 13 and 14
16. TITLE-ABS-KEY(newborn\* or neonat\* or infant\* or child\*) AND NOT TITLE-ABS-KEY(adult or adults or "middle age" or "middle aged" or elderly or geriatric\*)
17. 15 and not 16
18. DOCTYPE(le) OR DOCTYPE(ed) OR DOCTYPE(bk) OR DOCTYPE(er) OR DOCTYPE(no) OR DOCTYPE(sh)
19. 17 and not 18
20. PMID(0\*) OR PMID(1\*) OR PMID(2\*) OR PMID(3\*) OR PMID(4\*) OR PMID(5\*) OR PMID(6\*) OR PMID(7\*) OR PMID(8\*) OR PMID(9\*)
21. 19 and not 20

Records identified   
(n =391)

## Identification

Records excluded   
(n =282)

Records screened   
(n =391)

## Screening

Full-text articles excluded  
(n = 96)

4 Due to overlapping populations

92 not meeting inclusion criteria or data not available

## Eligibility

Full-text articles assessed for eligibility   
(n =109)

## Included

Studies included in

meta-analysis  
(n =13)

**Supplemental Figure1. Study selection**

**Supplemental Table 1. Risk of bias in observational studies**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author, year** | **Type of Study** | **Representativeness of the exposed cohort** | **Selection of the non exposed cohort** | **Ascertainment of exposure** | **Demonstration that outcome of interest was not present at start of study** | **Comparability of cohorts** | **Assessment of outcome** | **Was follow up long enough for outcomes to occur** | **Adequacy of follow up** |
| Dittrich, 2005 | Cohort | Somewhat representative (clinic based) | NA | Secure record (medical) | Not applicable | Not applicable | Record linkage | Yes | Complete follow up |
| Klink, 2015 | Cohort | Somewhat representative (clinic based) | NA | Secure record (medical) | Not applicable | Not applicable | Record linkage | Yes | Complete follow up |
| Mueller, 2010 | Cohort | Somewhat representative (clinic based) | NA | Secure record (medical) | Not applicable | Not applicable | Record linkage | Yes | Follow up rate more than 80% |
| Mueller, 2010 | Cohort | Somewhat representative (clinic based) | NA | Secure record (medical) | Not applicable | Not applicable | Record linkage | Yes | Complete follow up |
| Pelusi,2014 | Cohort | Somewhat representative (clinic based) | NA | Secure record (medical) | Not applicable | Not applicable | Record linkage | Yes | No statement |
| Reutrakul , 1998 | Cohort | Selected group | No description | Self report | Not applicable | Study controls for more than 1 factor | Record linkage | Yes | Complete follow up |
| Sosa, 2003 | Cohort | Somewhat representative (clinic based) | Drawn from same community | Secure record (medical) | Not applicable | Study controls for more than 1 factor | Record linkage | Yes | Complete follow up |
| Turner, 2004 | Cohort | Somewhat representative (clinic based) | NA | Secure record (medical) | Not applicable | Not applicable | Record linkage | Yes | Follow up rate less 80% |
| Van Caenegem, 2015 | Cohort | Somewhat representative (clinic based) | NA | Secure record (medical) | Not applicable | Not applicable | Record linkage | Yes | Complete follow up |
| Van Caenegem, 2015 | Cohort | Somewhat representative (clinic based) | NA | Secure record (medical) | Not applicable | Not applicable | Record linkage | Yes | Follow up rate less 80% |
| van Kesteren, 1996 | Cohort | Somewhat representative (clinic based) | NA | Secure record (medical) | Not applicable | Not applicable | Record linkage | Yes | Complete follow up |
| van Kesteren, 1997 | Cohort | Somewhat representative (clinic based) | NA | Secure record (medical) | Not applicable | Not applicable | Record linkage | Yes | No Statement |
| Wierckx, 2013 | Cohort | Somewhat representative (clinic based) | NA | Secure record (medical) | Yes | Not applicable | Record linkage | Yes | No statement |

**Supplemental table 2. Sensitivity analysis evaluating the change in Bone mineral density in Female to Male transgender individuals treated with intramuscular testosterone only**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Estimate** | **95% CI** | **I2** | **Number of Studies** |
|  | **12 months** | | | |
| **Lumbar spine (g/cm2)** | 0.003 | (-0.031,0.037) | 0 | 4 |
| **Total hip ( g/cm2)** | 0.017 | (-0.026,0.059) | 0 | 3 |