REFERENCES preceded by « 2/ »

Testosterone therapy in men: 312 placebo-controlled studies – 303 in adults

Healthy adults

Healthy young men


REFERENCES preceded by « 2/ »

**Healthy young men using testosterone for contraception (or sport abuse)**


**Healthy young men chemically castrated receiving testosterone**


REFERENCES preceded by « 2 »


Healthy middle-age men


Healthy elderly men


REFERENCES preceded by « 2/ »


Healthy elderly men chemically castrated receiving testosterone


Healthy middle-aged men ≥ age 40 with testosterone deficiency, serum testosterone level below the lower reference limit


Elderly men with serum testosterone levels near or below the lower reference limit of young men


REFERENCES preceded by « 2/ »


REFERENCES preceded by « 2/ »


REFERENCES preceded by « 2/ »


Healthy adult men of all ages with testosterone deficiency, serum testosterone level below the lower reference limit

Testosterone deficiency in adult men of all ages


REFERENCES preceded by « 2/ »


Klinefelter syndrome


Somatic diseases in adult men

Heart coronary artery disease


161. Royal Hallamshire Hospital, Sheffield S10 2JF, UK
REFERENCES preceded by «2/»


164. Smith AM, English KM, Malkin CJ, Jones RD, Jones TH, Channer KS. Testosterone does not adversely affect fibrinogen or tissue plasminogen activator (tPA) and plasminogen activator inhibitor-1 (PAI-1) levels in 46 men with chronic stable angina. Eur J Endocrinol. 2005 Feb;152(2):285-91.


Heart failure


Chronic obstructive pulmonary disease


REFERENCES preceded by « 2/ »


Sleep apnea

Liver disease - alcoholic cirrhosis

Kidney failure/hemodialysis

Rheumatoid arthritis

Osteopenia, osteoporosis

Obesity
REFERENCES preceded by « 2/ »


Type 1 diabetes


Type 2 diabetes


Type 2 diabetes and metabolic syndrome


Metabolic syndrome
REFERENCES preceded by « / »


Malnourishment in elderly men


Reduced mobility in elderly men


Ill elderly men


Surgery- pain


Surgery - recovery


HIV/AIDS


REFERENCES preceded by « 2/ »


Overall cancer


Prostate cancer


Sexual dysfunction: low sex drive, erectile dysfunction, reduced ejaculatory function


Lack of fertility


REFERENCES preceded by « 2/ »


Neuropsychiatric diseases in adult men

Cognitive impairment


Depression


REFERENCES preceded by « 2/ »

Social anxiety

Schizophrenia

Drug addiction, opioid-induced androgen deficiency

Parkinson’s disease

Somatic underdevelopment in boys
Hypospadias, penis hypotrophy in boys

Puberty delay, short stature: testosterone treatment for puberty initiation and growth improvement in prepubertal adolescent boys

Testosterone in women: 103 placebo-controlled studies – all in adults

Healthy women
Healthy young women


Young women undergoing in vitro fertilization procedures


Testosterone-deficient women

Women of all ages with overt testosterone deficiency of all ages, serum testosterone level below the lower reference limit

REFERENCES preceded by « 2/ »


Sexual dysfunction


REFERENCES preceded by « 2/ »


Women with hysterectomy with or without oophorectomy


Cognitive dysfunction


Women with primary ovarian deficiency


Anorexia nervosa women


Lupus erythematosus

REFERENCES preceded by « 2/ »

Postmenopausal women


Women with HIV/AIDS
REFERENCES preceded by « 2/ »


Cardiac failure - postmenopausal women


Lichen sclerosus – topical testosterone treatment


Thyroid treatment: 158 placebo-controlled studies (130 in adults)

Adults

Healthy young adults: Thyroxine treatment


Healthy young adults: Triiodothyronine treatment


Healthy adults of all ages: Triiodothyronine treatment


Healthy elderly adults: Thyroxine treatment


Healthy adults undergoing space flight stimulation: Triiodothyronine treatment


Healthy adults undergoing adaptation to extreme cold (Antarctic polar environment): Thyroxine treatment


Healthy adults undergoing adaptation to extreme cold (Antarctic polar environment): Triiodothyronine treatment


Adults with a family history of thyroid disease and a serum TSH within or above the upper serum TSH limit: Thyroxine treatment


Adults of all ages with subclinical hypothyroidism (serum TSH above the upper reference limit and serum T4 within the reference range): Thyroxine treatment


REFERENCES preceded by « 2/ »


Adults of all ages with overt hypothyroidism: Thyroxine or thyroxine and triiodothyronine treatment


Patients with thyroid nodules: Thyroxine treatment


Patients with endemic goiter: Thyroxine treatment
REFERENCES preceded by « 2/ »


Patients after thyroidectomy: Thyroxine treatment


Adults with hypothyroid symptoms but thyroid tests within reference range: Thyroxine treatment


Adults during or after hyperthyroidism for Graves disease: Thyroxine treatment


Adults with obesity: Triiodothyronine treatment


Adults with Raynaud syndrome: Triiodothyronine treatment


Adults with heart failure: Triiodothyronine treatment


Adults with cardiac surgery Triiodothyronine treatment


REFERENCES preceded by « 2/ »


Patients with asthma: Triiodothyronine treatment


Adults with kidney failure and/or hemodialysis: Thyroxine treatment


Patients with burn injury: Triiodothyronine treatment


Female patients with premenstrual syndrome: Triiodothyronine treatment


Female patients with infertility and with subclinical hypothyroidism or thyroid antibody positivity undergoing in vitro fertilization: thyroxine treatment


Female patients with infertility: thyroid extract treatment


Brain dead organ donors: Triiodothyronine treatment

REFERENCES preceded by « 2/ »


Patients on anti-epileptics: Thyroxine treatment


Elderly patients with dementia: Triiodothyronine treatment


Patients with depression and subclinical hypothyroidism: Thyroxine treatment


Patients with depression: Triiodothyronine treatment


Female patients with positive thyroid antibodies: thyroxine treatment to prevent postnatal depression


Patients with depression on antidepressants: Addition of triiodothyronine treatment


Patients on antidepressant therapy + T3 or thyroxine

**Patients with schizophrenia: Triiodothyronine treatment**


**Patients with alopecia areata: Topical triiodothyronine**


**Thyroid hormone analog D-thyroxine**

**Adults with heart failure: Thyroxine treatment**


**Adults with dyslipidemia: D-thyroxine treatment**


**Adults with coronary heart disease: D-thyroxine treatment**


**Adults with hemorrhagic stroke: D-thyroxine treatment**


**Adults with scleroderma: D-thyroxine treatment (not efficient)**


**Children**

**Fanconi anemia syndrome - children: Thyroxine treatment for growth stimulation**


**Attention deficit disorder – children: Triiodothyronine treatment**


**Autism – children: Triiodothyronine treatment**


**Down syndrome - children**

549. Marchal JP, Maurice-Stam H, Ikelaar NA, Klouwer FC, Verhorstert KW, Witteveen ME, Houtzager BA, Grootenhuis MA, van Trotsenburg AS. Effects of early thyroxine treatment on development and growth at age


Pre-term infants: Thyroxine treatment


Pre-term infants: Triiodothyronine or thyroxine treatment


Children undergoing heart surgery for congenital heart disease


REFERENCES preceded by « 2/ »


Double-blind, crossover, but not placebo-controlled: Desiccated thyroid extract or T3/T4 associations compared with levothyroxine treatments

Double-blind randomized controlled trials with significant superior effects of T4-T3 versus T4 alone


575. Hoang TD, Olsen CH, Mai VQ, Clyde PW, Shakir MK. Desiccated thyroid extract compared with levothyroxine in the treatment of hypothyroidism: a randomized, double-blind, crossover study. J Clin Endocrinol Metab. 2013 May;98(5):1982-90 (A Patients (n = 70, age 18-65 years) diagnosed with primary hypothyroidism, at the end of the study, 34 patients (48.6%) preferred desiccated thyroid extract (DTE), 13 (18.6%) preferred L-T4, and 23 (32.9%) had no preference.)

Double-blind randomized controlled study with near significantly superior effects of T4-T3 versus T4 alone

576. Bunevicius R, Jakubonien N, Jurkevicius R, Cernicat J, Lasas L, Prange AJ. Thyroxine vs thiroido in treatment of hypothyroidism after thyroidectomy for Graves' disease. Endocrine. 2002 Jul;18(2):129-33 (no significant differences were found on measures of mood, cognition, or physiologic variables between treatments, but symptoms of hypothyroidism and of hyperthyroidism tended to decrease on a standard symptom scale after combined treatment, mental state tended to improve on some mood scales)

Double-blind randomized controlled trials with no superior significant effects of T4-T3 versus T4 alone, but more patients preferring T4/T3 than T4 alone

577. Appelhof BC, Fliers E, Wekking EM, Schene AH, Huys J, Tijsen JG, Endert E, van Weert HC, Wiersinga WM. Combined therapy with levothyroxine and liothyronine in two ratios, compared with levothyroxine monotherapy in primary hypothyroidism: a double-blind, randomized, controlled clinical trial. J Clin Endocrinol Metab. 2005 May;90(5):2666-74. (141 patients (18-70 yr old) with primary autoimmune hypothyroidism: 52.2% and 41.3% patients preferred the T3-T4 combinations (in T4:T3 ratios of 5:1 and 10:1 respectively) compared to 29.2% for T4 alone treatment)

578. Saravanan P, Simmons DJ, Greenwood R, Peters TJ, Dayan CM. Partial substitution of thyroxine (T4) with triiodothyronine in patients on T4 replacement therapy: results of a large community-based randomized controlled trial. J Clin Endocrinol Metab. 2005 Feb;90(2):805-12. University of Bristol, Whitson Street, Bristol BS1 3NY, UK. (697 hypothyroid patients, a subgroup of patients showing transient improvement after partial substitution with T3.)

Non-randomized controlled trials with no superior significant effects of T4-T3 versus T4 alone, but more patients preferring T4/T3 than T4 alone


Double-blind randomized controlled trial with no superior significant effects of T4-T3 versus T4 alone, but patients with T3-T4 kept a higher TSH (indicative of a too low dose)


Double-blind randomized controlled trial with globally no superior significant effects of T4-T3 versus T4 alone, except on one parameter where the patients onT4-T3 combinations did better:
REFERENCES preceded by « 2/ »

581. Clyde PW, Harari AE, Getka EJ, Shakir KM. Combined levothyroxine plus liothyronine compared with levothyroxine alone in primary hypothyroidism: a randomized controlled trial. JAMA. 2003 Dec 10;290(22):2952-8. (the 1/13 remaining test (Grooved Peg Board) showed better performance in the control group.

Double-blind randomized controlled trials with no superior effects of T4-T3 versus T4 alone


Aldosterone: 13 placebo-controlled trials – all in adults

Healthy men: IV aldosterone produces acute cardiovascular (sympathetic) effects (first 45 min after injection) and delayed (5½ - 6½ h after) increased vagal tone (parasympathetic predominance)


Healthy men: Aldosterone at 100 µg, tending to increase cardiac vagal activity and enhances the heart rate (tachycardia) response to diastolic blood pressure-reducing nitroprusside


Healthy men: Aldosterone at 3 µg/min. rapidly impairs the baroreflex response.

587. Schmidt BM, Horisberger K, Feuring M, Schultz A, Wehling M. Aldosterone blunts human baroreflex sensitivity by a nongenomic mechanism. Exp Clin Endocrinol Diabetes. 2005 May;113(5):252-6. (tachycardic response to arterial baroreceptor deactivation was more pronounced in the aldosterone experiments)

Healthy men: Aldosterone (+7.6%) increases blood flow by increasing NO release and at the vascular smooth muscle cells by promoting vasoconstriction of forearm arteries


Healthy men: IV aldosterone rapidly attenuated endothelium-dependent vasodilatation to acetylcholine (-28% less vasodilatation)

Healthy men: Aldosterone increases phosphocreatine recovery in muscles to significantly higher levels immediately after isometric contraction within 8 min of aldosterone administration


Healthy men: IV aldosterone at 500 µg (pharmacological dose) slightly reduces glomerular filtration rate and with inhibition of nitric oxide synthase reduces renal blood flow, triggering a mechanism for increases in blood pressure


Healthy men: Aldosterone reduces the excretion of sodium and chloride and increases excretion of potassium and (net) acid in the urine
REFERENCES preceded by « 2/ »


Healthy men: no obvious effect on sleep of aldosterone

Patients with disease

Orthostatic hypotension: Aldosterone reduces orthostatism

Suspected coronary heart disease: IV aldosterone at supraphysiological dose (1 mg) increases systemic vascular resistance, cardiac output, and cardiac index within 3 minutes, effect disappeared within 10 min.

Supraventricular arrhythmias: IV aldosterone increases monophasic action potential duration within minutes in patients

Fludrocortisone treatment: 19 placebo-controlled studies – 17 in adults

Healthy adults

Young healthy women: Fludrocortisone treatment produces significant suppression of CRH secretion, trend to significant reduction of secretion of ACTH and cortisol secretion from dose 75 µg/day on

Healthy adults: Fludrocortisone treatment produces significant effects on pituitary-adrenal axis, arterial tone and intestinal sodium excretion


Aldosterone deficiency: Fludrocortisone produces significantly beneficial effects (reduction of sodium excretion)

Orthostatic hypotension: Fludrocortisone significantly reduces orthostatic hypotension in patients

Vasovagal syncope: Fludrocortisone significantly reduced the likelihood of syncope in patients
Orthostatic hypotension: Fludrocortisone does not prevent orthostatic hypotension after space flight

Chronic fatigue syndrome: Fludrocortisone associated to hydrocortisone at very low doses does not significantly reduces fatigue

Chronic fatigue syndrome: Fludrocortisone alone does not significantly improve CFS symptoms

Borderline personality disorder: Fludrocortisone at supraphysiological doses (400 µg/day) improves memory (cognitive function: verbal, visuospatial and working memory), in healthy subjects only working memory

Borderline personality and major depressive disorders, healthy subjects: No effect of fludrocortisone on autobiographical memory

Severe traumatic brain injury: Fludrocortisone associated to hydrocortisone at low doses does not significantly prevent hospital-acquired pneumonia

Septic shock: Fludrocortisone associated to hydrocortisone at low doses produces beneficial effects, including better renal function

Septic shock: Fludrocortisone associated to hydrocortisone at low doses reduces mortality

Children
Children with syncope or severe presyncope: Fludrocortisone: produces significant beneficial effects to reduce syncopal symptoms; including syncope

REFERENCES preceded by « 2/ »

Thymosin alpha 1 treatment: 16 human placebo-controlled trials mentioned in PubMed

Elderly men: the immune stimulation with thymosin-alpha-1 (1 trial, 85 patients)

Cancer (overall) after radiotherapy or chemotherapy (immune depression): trend toward improvement

Mentions 3 more placebo-controlled trials in review
REFERENCES preceded by «2/»


Cancer (lung) after radiotherapy (immune depression): the improvement with thymosin-alpha-1 (2 trials, 63 patients)
