Practitioner Education

Learn with me

Evolving Concepts in Care

Carla Wrenn.

Integrative Naturopathic Practitioner

carlawrenn.com


The Andropause Shift
February 2026
Carla Wrenn.
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Carla Wrenn

- Degree Qualified Naturopath & Nutritionist in practice for 23 years.
- Founder of Vitae Mosaic – Naturopathic Functional Medicine practitioner training program.
- Founder of PROSPER Naturopathic Oncology supporting patients to use CM before, during & after cancer treatment & training practitioners in cancer support.
- Owner & Director of Peninsula Herbal Dispensary & Naturopathic Clinic in Mornington, Victoria.

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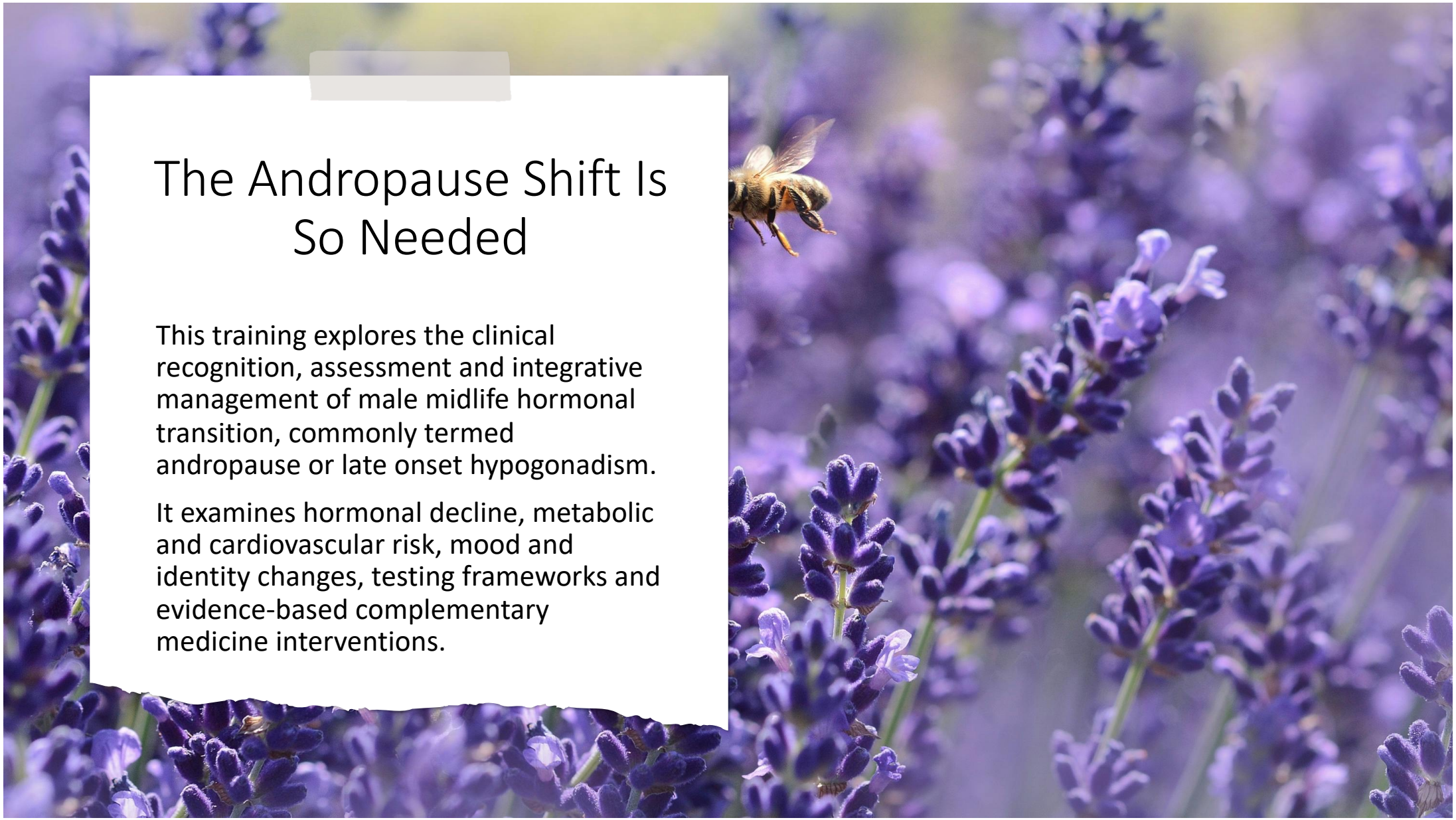

The Andropause Shift Is So Needed

This training explores the clinical recognition, assessment and integrative management of male midlife hormonal transition, commonly termed andropause or late onset hypogonadism.

It examines hormonal decline, metabolic and cardiovascular risk, mood and identity changes, testing frameworks and evidence-based complementary medicine interventions.

Learning Objectives

By the end of today's session, you will:

- Recognise signs and symptoms of andropause.
- Understand hormonal and metabolic shifts.
- Interpret pathology and functional testing.
- Assess mood and psychosocial impacts.
- Apply evidence-based naturopathic interventions.
- Identify referral or TRT indications.

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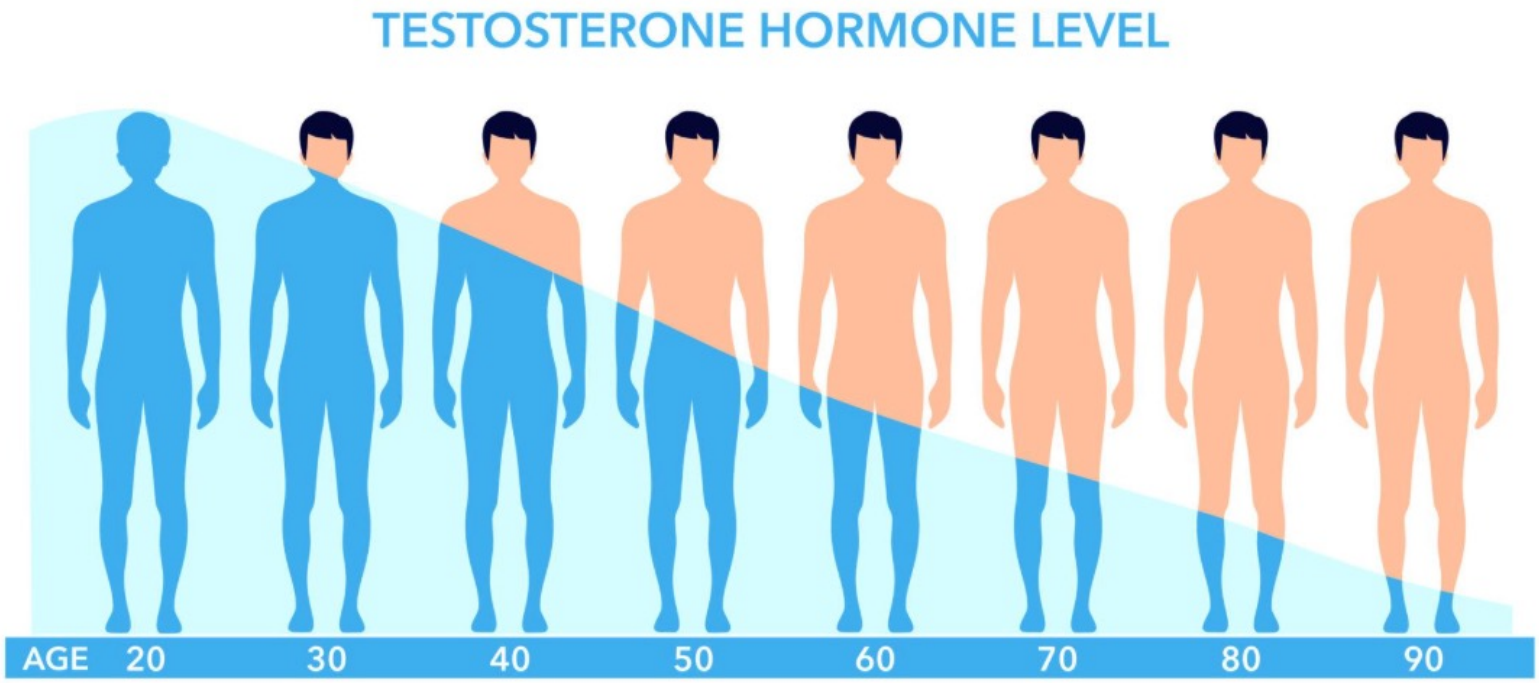
Andropause — The Silent Midlife Transition

- Andropause refers to the gradual decline in testosterone and androgen activity in ageing men. Unlike menopause, this transition is progressive, variable and often under-recognised. Testosterone declines approximately 1% per year from age 30–40.



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The Gender Health Gap

- Female hormonal transitions have extensive public health discussion: education campaigns
- clinical pathways
- workplace policy support.

PLUS millions… or more marketing spend.

Male hormonal ageing remains comparatively under-discussed, under-diagnosed and socially stigmatised.

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7 EXCLUSIVE
MENOPAUSE SYMPTOMS
LOW LIBIDO
LOW MOOD
SLEEP DISTURBANCES


THE AUSTRALIAN
Women's Weekly
health summit
Meet the Melbourne Menopause Panellists!
Brought to you by
priceline pharmacy
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BLACKMORES


THE ULTIMATE
LADIES NIGHT OUT IS BACK!
Menopause
The Musical®
2 WEEKS ONLY! 19 SEPT - 5 OCT
EMMA POWELL
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ERIKA HEYNATZ

Cultural & Psychosocial Barriers

Men are less likely to seek care due to:

- stoicism culture
- stigma around mental health
- sexual performance concerns
- fear of ageing
- loss of identity linked to vitality and productivity.

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Australian Data & Prevalence

Available estimates suggest approx 20–30% of men over 50 have biochemical testosterone deficiency, rising to approx 50% over 80.

Diagnosis and treatment rates remain low despite increasing prescribing trends.

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Hormonal Physiology of Male Ageing

Ageing is associated with reductions in Total and Free Testosterone, rising SHBG, declining DHEA and Growth Hormone, melatonin reduction, cortisol dysregulation and relative oestradiol increases via aromatisation.

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“Men are subject to age-related testosterone decline, but andropause remains frequently under-diagnosed and under-treated.”
PMID: 25092967
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Drivers of Testosterone Decline

1. Leydig cell ageing
2. Hypothalamic signaling changes
3. Visceral adiposity
4. Insulin resistance
5. Chronic inflammation
6. Alcohol use
7. Sleep apnoea
8. Endocrine disruptor exposure

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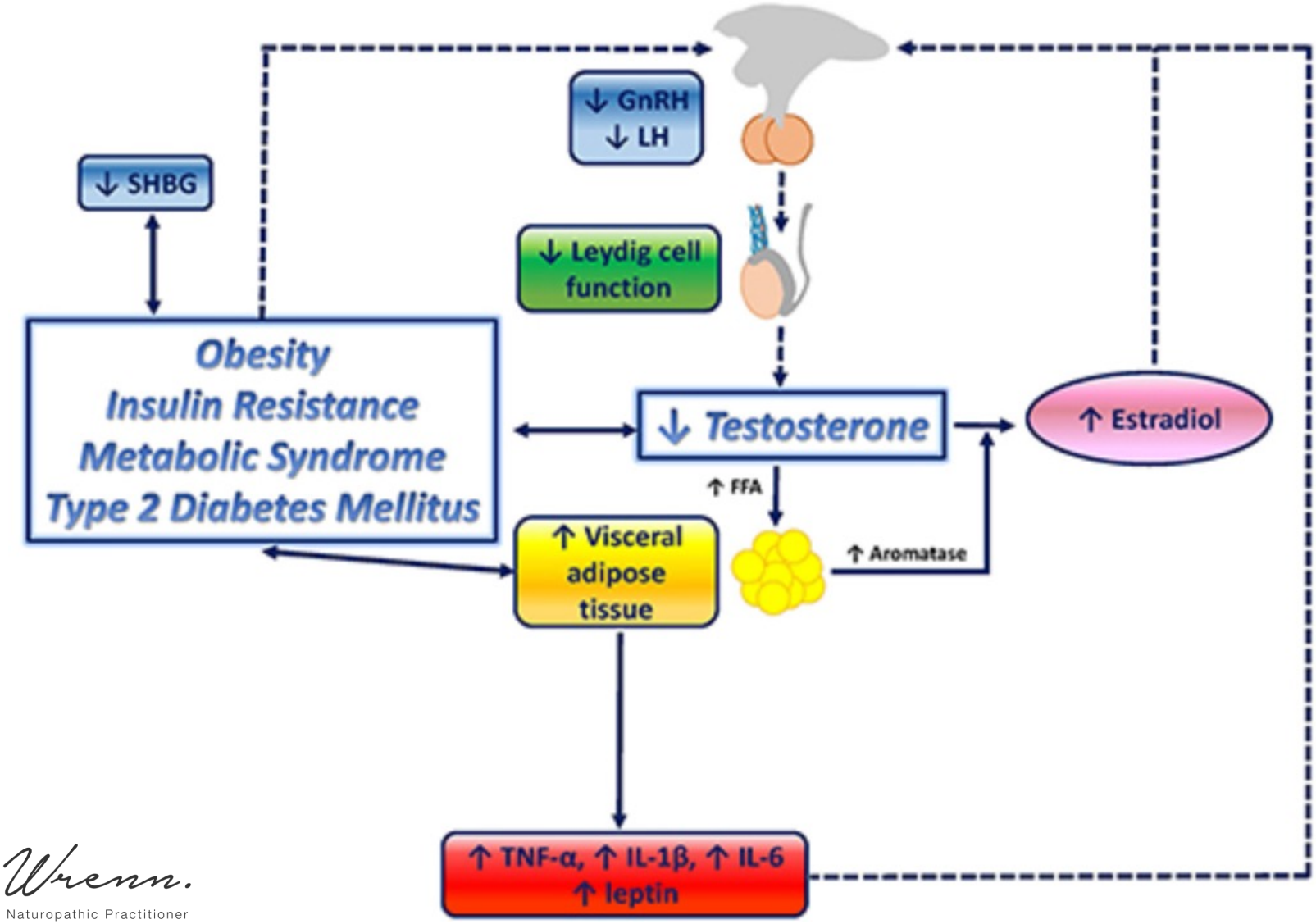

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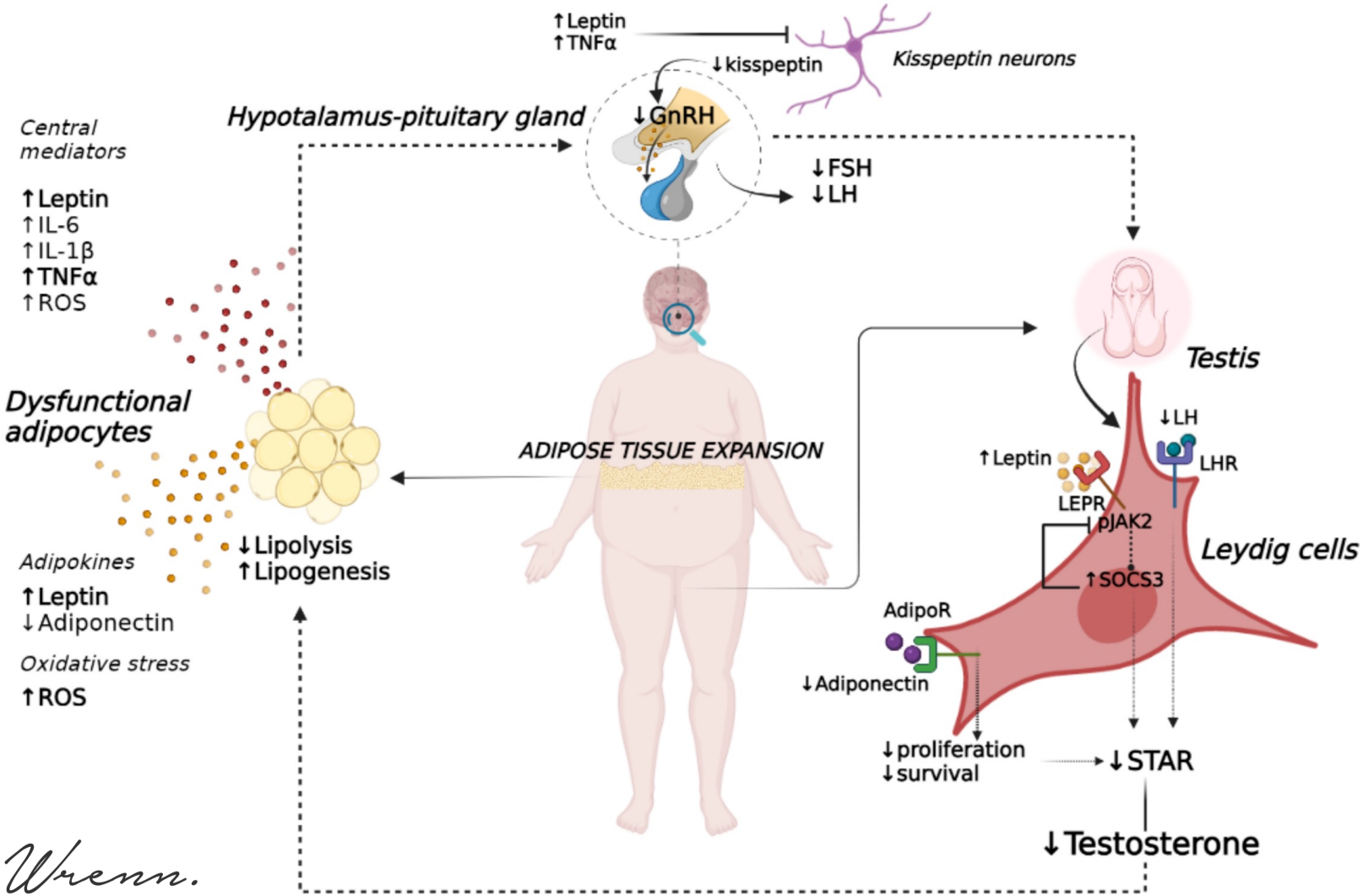

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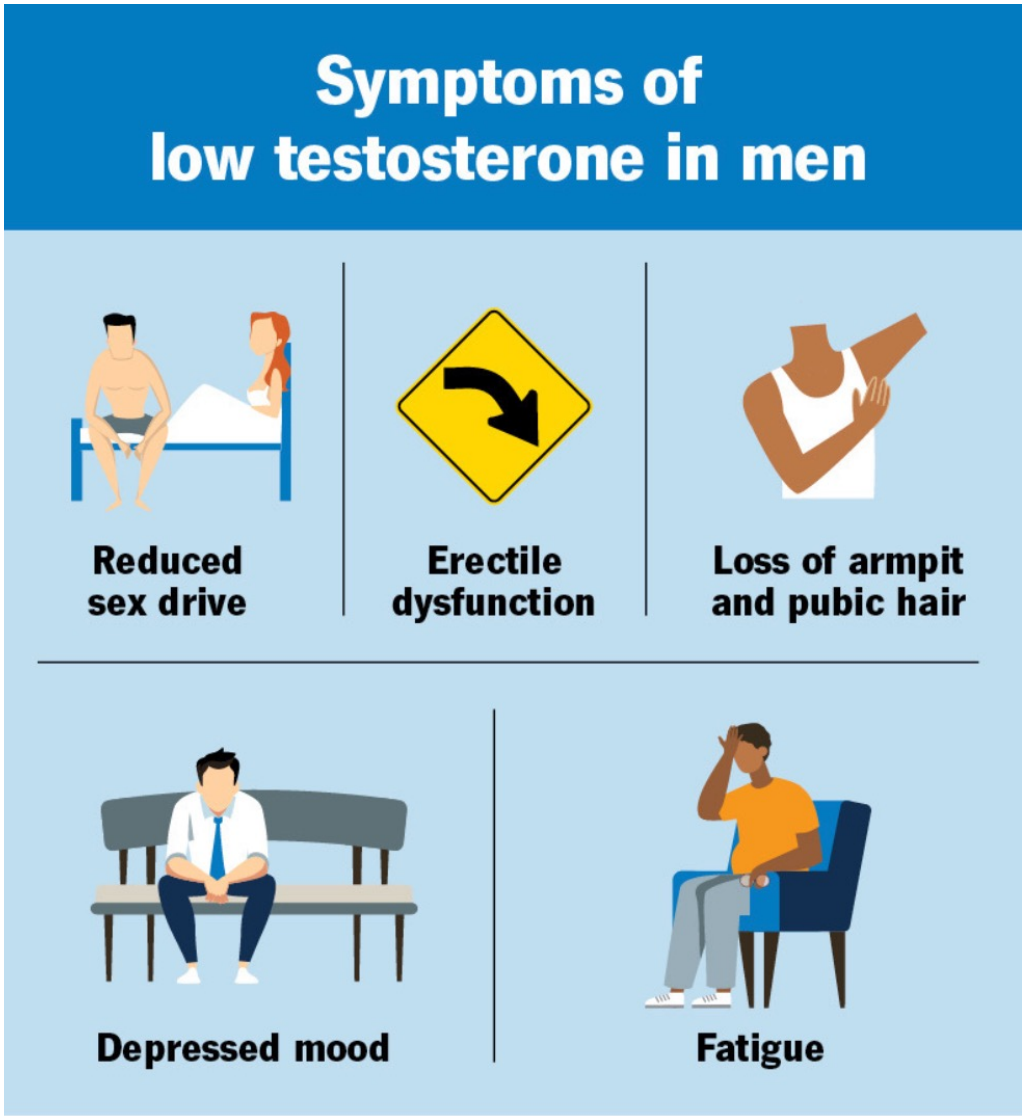
Clinical Signs & Symptoms

- Reduced muscle mass
- Abdominal adiposity
- Fatigue
- Reduced stamina
- Libido decline
- Erectile dysfunction
- Mood disturbance
- Irritability
- Anxiety
- Brain fog
- Sleep disturbance



More Clinical Signs & Symptoms

- Night sweating
- Hot flushes
- Joint pains
- Weight gain
- Memory loss
- Reduced beard growth
- Lowered self-confidence
- Gynaecomastia

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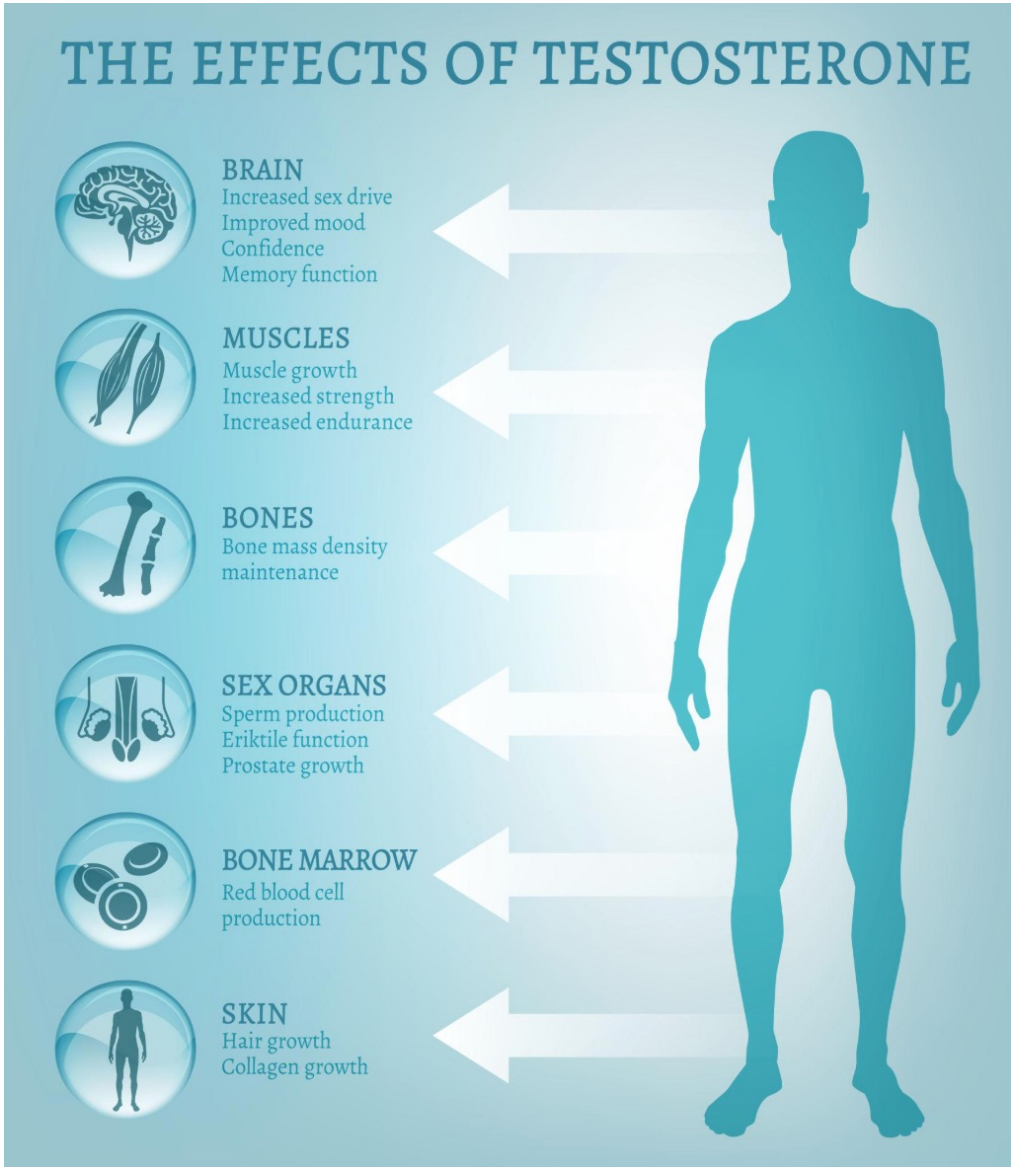

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Sexual & Reproductive Changes

- Reduced morning erections
- Delayed ejaculation
- Sperm quality decline
- Reduced sexual confidence

Metabolic Impacts

Low testosterone contributes to:

- insulin resistance
- visceral adiposity
- Sarcopenia
- reduced metabolic rate
- increased Type 2 diabetes risk.

Metabolic Syndrome Association

Testosterone deficiency correlates with:

- Dyslipidaemia
- Hypertension
- Central obesity
- Metabolic syndrome development.

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Cardiovascular Risk

Low testosterone is associated with:

- Endothelial dysfunction
- Atherosclerosis
- Increased carotid intima thickness
- Higher cardiovascular mortality risk.

Mental Health & Identity

Male midlife transition may involve increased rates of:

Depression

Loss of confidence

Role identity challenges

Retirement stress

Relationship strain

Suicide rates peak in Australian men aged 45–64.

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Can we afford not to assess for Andropause?

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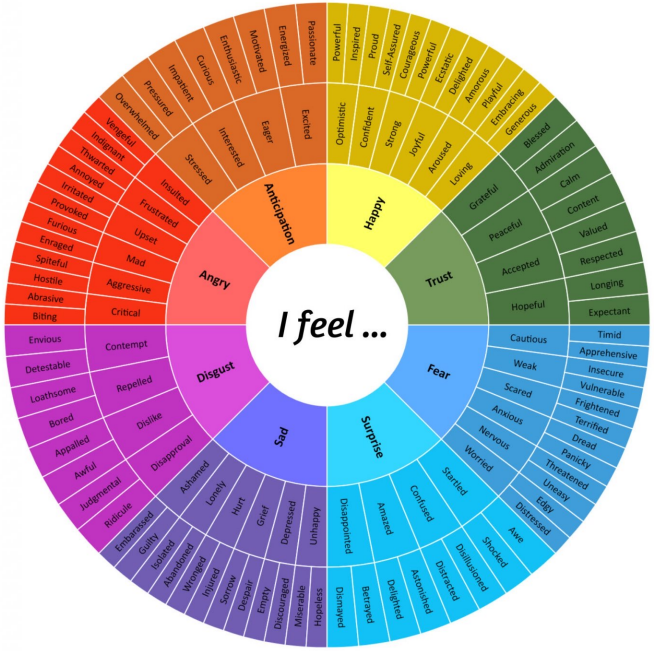
DASS 21 - Depression Anxiety Stress Scale Test

This DASS 21 depression anxiety stress scale test evaluates the severity of mental disorder symptoms associated to the three and provides a mild, moderate or severe result. Below the form there are instructions on how to interpret the result as well as in which axis each of the questions belongs too.

1	I found it hard to wind down.	Never (0 points)
2	I was aware of dryness of my mouth.	Never (0 points)
3	I couldn't seem to experience any positive feeling at all.	Never (0 points)
4	I experienced breathing difficulty.	Never (0 points)
5	I found it difficult to work up the initiative to do things.	Never (0 points)
6	I tended to over-react to situations.	Never (0 points)
7	I experienced trembling (eg, in the hands).	Never (0 points)
8	I felt that I was using a lot of nervous energy.	Never (0 points)
9	I was worried about situations in which I might panic and make a fool of myself.	Never (0 points)
10	I felt that I had nothing to look forward to.	Never (0 points)
11	I found myself getting agitated.	Never (0 points)

Feelings Wheel



Whatever you can name
you can start to manage

LEADSKILL.COM

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Assessment Framework

Comprehensive case taking includes libido, erections, energy, sleep, mood, body composition, stress load, alcohol intake and occupational burnout.

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www.centreformenshealth.co.uk

Centre for Men's Health

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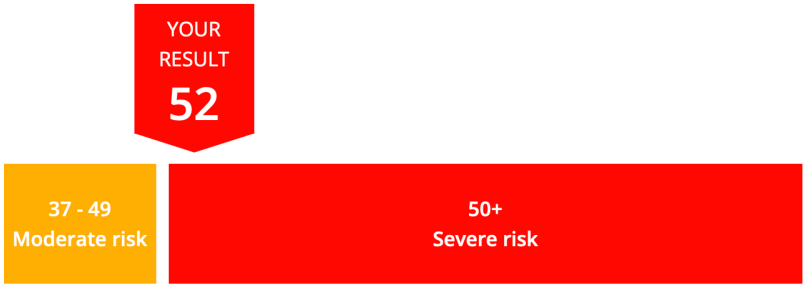
Home | Men's Health Services | Our Specialists | Patient Stories | FAQs | Resources | Contact Us | Book an appointment

My Results

Home > Men's Health Services > Low Testosterone Symptom Test > My Results

My Results

Thank you for participating in our free, confidential self test questionnaire. The score from this test is frequently used by doctors in the diagnosis of testosterone deficiency and monitoring of treatment. Your personal test result is below:



What to do next

Severe risk: Your score indicates that you have many of the symptoms of Testosterone Deficiency Syndrome. We would suggest you arrange an appointment to discuss your results with us or share them with your doctor or other healthcare professional.

CHAT NOW TO SEE HOW WE CAN HELP

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Low Testosterone Questionnaire

ADAM Questionnaire (Androgen Deficiency in the Aging Male)

If you are concerned that your testosterone level is low, this set of ten simple questions is a good place to start. You can save a copy of this form to your personal computer by clicking on the file menu on the top left of the page and then selecting "save as" or "save a copy".

	Answer YES or NO to each of the following questions:	Yes	No
1.	Do you have a decrease in libido (sex drive)?		
2.	Do you have a lack of energy?		
3.	Do you have a decrease in strength and/or endurance?		
4.	Have you lost height?		
5.	Have you noticed a decreased "enjoyment of life?"		
6.	Are you sad and/or grumpy?		
7.	Are your erections less strong?		
8.	Have you noticed a recent deterioration in your ability to play sports?		
9.	Are you falling asleep after dinner?		
10.	Has there been a recent deterioration in your work performance?		

If you answered YES to questions 1 or 7 or any 3 other questions, you may be experiencing androgen deficiency (low testosterone level). A simple saliva test done in the privacy of your home can help you determine your free testosterone level. To order a home-saliva testosterone test click the link below.

http://www.prostatehealthnaturally.com/prostate_supplements/prostate_supplements_other.html

***Adapted from Morley, et al. Validation of a screening questionnaire for androgen deficiency in aging males. Metabolism. 2000;49(9):1239-1242*

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Pathology Testing

Core testing includes:

- Total & Free Testosterone
- SHBG
- DHEA-S
- Oestradiol
- LH
- FSH
- Prolactin
- Thyroid panel
- Nutrient markers – Zinc, Iron, B12, Vitamin D
- ESR & hsCRP

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Core Hormone Pathology — Reference Ranges

Total Testosterone (morning fasting sample)

- Typical reference range: ~10–35 nmol/L (lab dependent)
- <12 nmol/L: often considered low
- 8–12 nmol/L: borderline / symptomatic in many men

Free Testosterone

- More clinically relevant than total
- Low even when total appears “normal”

Clinical pearl:
Symptoms often correlate more strongly with **free testosterone** than total.

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SHBG — The Hidden Modifier

Sex Hormone Binding Globulin (SHBG) binds testosterone and reduces bioavailability.

High SHBG → Lower Free Testosterone

- Common drivers of elevated SHBG:
- Ageing
- Hyperthyroidism
- Liver disease
- Alcohol excess
- Caloric restriction
- HIV medications

Clinical pearl: A man may have “normal” total testosterone but still be functionally deficient if SHBG is high.

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Free Androgen Index (FAI)

Calculated using Total Testosterone + SHBG.

Provides insight into bioavailable androgen activity.

Low FAI correlates with:

- Low libido
- Fatigue
- Reduced muscle mass
- Erectile dysfunction

Useful when:

- SHBG abnormal
- Borderline testosterone
- Metabolic syndrome present

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LH & FSH — Primary vs Secondary Hypogonadism

LH & FSH help identify origin of deficiency

Primary (Testicular Failure)

- Testosterone ↓
- LH ↑
- FSH ↑

Secondary (Pituitary / Hypothalamic)

- Testosterone ↓
- LH ↓ or normal
- FSH ↓ or normal

Clinical pearl: Secondary causes often respond well to lifestyle and metabolic intervention.

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Oestradiol & Aromatisation

Testosterone converts to oestradiol via aromatase enzyme.

Higher in:

- Visceral obesity
- Insulin resistance
- Alcohol excess
- Ageing

High oestradiol may contribute to:

- Gynaecomastia
- Mood swings
- Fluid retention
- Libido decline

Interpretation pearl:
Balance matters — not suppression.

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DHEA — The Adrenal Androgen

DHEA declines with age.

Supports:

- Testosterone production
- Mood resilience
- Immune function
- Energy
- Low levels may reflect:
- Adrenal fatigue / HPA dysregulation
- Chronic stress
- Ageing

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Cortisol & the HPG Axis

Chronic cortisol elevation suppresses testosterone.

Mechanisms include:

- GnRH suppression
- LH reduction
- Leydig cell inhibition

Clinical pearl:
Stress management is androgen therapy!

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Metabolic Testing Interpretation

Key associations:

- Low testosterone ↔ insulin resistance
- Elevated fasting insulin ↔ reduced SHBG
- Increased visceral fat ↔ aromatisation

Test markers to review:

- Fasting insulin
- HbA1c
- Triglycerides
- HDL ratio

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Thyroid Interaction

Hypothyroidism may mimic andropause:

- Fatigue
- Weight gain
- Low mood
- Libido decline

Hyperthyroidism raises SHBG → lowers free testosterone.

Always screen thyroid alongside sex hormones.

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Nutrient Cofactor Testing

Low levels impair androgen production:

- Zinc → testosterone synthesis
- Vitamin D → androgen receptor activity
- Magnesium → free testosterone
- B12 → energy & mood

Clinical pearl:
Correct deficiencies before considering TRT.

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Advanced Interpretation Pearls Slide

- Treat the patient, not just the number – SO IMPORTANT
- Free testosterone drives symptoms
- SHBG explains many “normal testosterone” cases
- Visceral fat is an endocrine organ – SO COMMON
- Sleep apnoea suppresses testosterone
- Chronic stress lowers androgens – ALSO COMMON
- Metabolic syndrome accelerates decline
- Lifestyle intervention can rival TRT in early deficiency

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Functional & Advanced Testing

- DUTCH testing
- Nutripath Cortisol Adrenal assessment
- Metabolic Assessment - HbA1c, IR, Fasting Insulin & Glucose
- Microbiome analysis
- Organic acids
- Sleep studies
- LFT

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NUTRIPATH · PATIENT REPORT

16 Harker St, Burwood VIC, 3125 • info@nutripath.com.au • 1300 688 522

NATA Accreditation: #20770

25343-0075

Dr Test Doctor Test Clinic. 123 Test Street, Test Suburb Victoria 3125

Lab ID
Patient ID P000061
Ext ID 25343-0075

Test Patient

Sex: Male • 55yrs • 01-Jan-70

123 Home Street, Test Suburb VIC 3125

RECEIVED
09-Dec-25

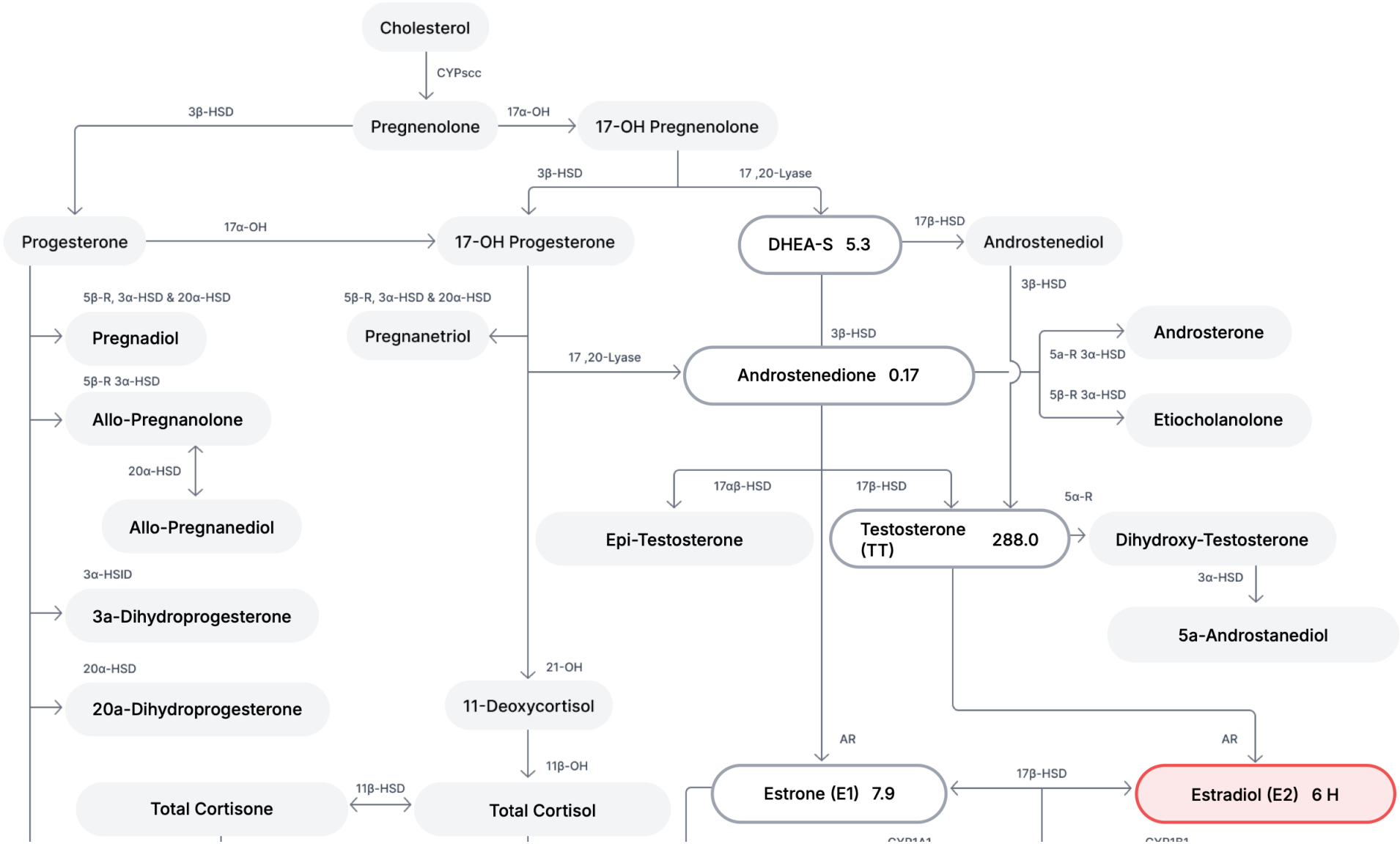
MALE HORMONES, EXTENSIVE

Specimen type - Saliva

Collected
05-Dec-25

MALE HORMONES, Extensive

TEST	RESULT	H/L	REFERENCE	UNITS
DHEA-S	5.3		(2.5-25.0)	nmol/L
Androstenedione	0.17		(0.15-0.42)	nmol/L
Testosterone (TT)	288.0		(80.0-360.0)	pmol/L
Estradiol (E2)	6	H	(2-5)	pmol/L
Estrone (E1)	7.9		(2.5-12.0)	pmol/L
Androstenedione/E1 Ratio	0.022		(0.005-1.100)	ratio

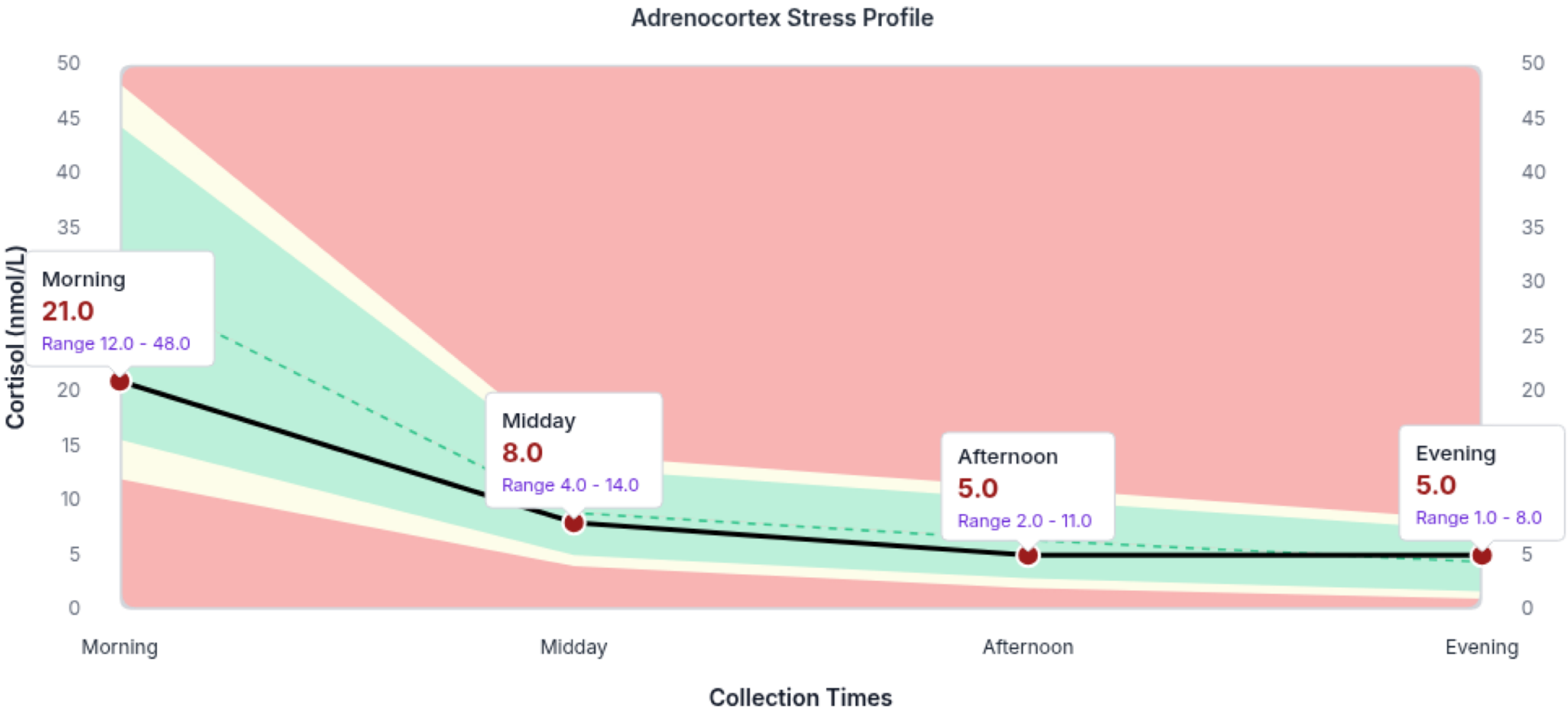

Cholesterol
CYPscc
3β-HSD
Pregnenolone
17α-OH
17-OH Pregnenolone
3β-HSD
17 ,20-Lyase
Progesterone
17α-OH
17-OH Progesterone
DHEA-S 5.3
17β-HSD
Androstenediol
5β-R, 3α-HSD & 20α-HSD
Pregnadiol
5β-R, 3α-HSD & 20α-HSD
Pregnanetriol
3β-HSD
17 ,20-Lyase
Androstenedione 0.17
3β-HSD
5a-R 3α-HSD
Androsterone
5β-R 3α-HSD
Etiocholanolone
5β-R 3α-HSD
Allo-Pregnanolone
20α-HSD
Allo-Pregnanediol
17αβ-HSD
17β-HSD
5α-R
Epi-Testosterone
Testosterone (TT) 288.0
Dihydroxy-Testosterone
3α-HSD
5a-Androstanediol
3α-HSID
3a-Dihydroprogesterone
20α-HSD
20a-Dihydroprogesterone
21-OH
11-Deoxycortisol
AR
AR
11β-OH
11β-HSD
Total Cortisone
Total Cortisol
Estrone (E1) 7.9
17β-HSD
Estradiol (E2) 6 H

ADRENOCORTEX AND MALE BASIC PROFILE

Specimen type - Saliva

Collected

05-Dec-25 08.00am, 12.00pm, 04.00pm, 08.00pm



CORTISOL Values

TEST	RESULT	H/L	REFERENCE		UNITS
Cortisol, Morning	21.0		(12.0-48.0)		nmol/L
Cortisol, Midday	8.0		(4.0-14.0)		nmol/L
Cortisol, Afternoon	5.0		(2.0-11.0)		nmol/L
Cortisol, Evening	5.0		(1.0-8.0)		nmol/L
Cortisol Daily, Total	39.0		(11.0-76.0)		nmol/L

DHEAS Values

TEST	RESULT	H/L	REFERENCE		UNITS
DHEAS, Morning	6.6		(2.5-25.0)		nmol/L
DHEAS/Cortisol AM	0.31		(0.20-0.60)		ratio

MALE Hormones

TEST	RESULT	H/L	REFERENCE		UNITS
Testosterone (TT)	288.0		(80.0-360.0)		pmol/L
Estradiol (E2)	7	H	(2-5)		pmol/L
Estrone (E1)	14.0	H	(2.5-12.0)		pmol/L

Differential Considerations

Rule out thyroid dysfunction

- Depression
- Chronic fatigue
- Iron deficiency
- NAFLD
- Sleep apnoea
- Diabetes
- Medication impacts
- Addiction

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Lifestyle Treatment Foundations

First-line interventions:

- Resistance training – Just MOVE!
- Sleep optimisation
- Weight management – Discuss, waist circumferance
- Detoxification – Teach about the LFT's
- Alcohol reduction

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Nutritional Medicine

Key nutrients include:

- Zinc
- Vitamin D
- Magnesium
- Omega-3 fatty acids
- B vitamins
- CoQ10
- NR & NMN

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> Crit Rev Food Sci Nutr. 2023;63(21):5194-5205. doi: 10.1080/10408398.2021.2015284.
Epub 2021 Dec 14.

Vitamin D, testosterone and depression in middle-aged and elderly men: a systematic review

Shirin Amini [1], Sima Jafarirad [2], Behnaz Abiri [3]

Affiliations + expand

PMID: 34904472 DOI: 10.1080/10408398.2021.2015284

Abstract

Depression is one of the common psychiatric disorders during elderly. This systematic review aims to present the relationship between vitamin D deficiency, depression and testosterone serum concentration in the middle-aged and elderly men. We performed a comprehensive search in the Google Scholar, PubMed, ProQuest, Web of Science, Cochrane, Science Direct, and Scopus databases to collect any relevant published studies. The data of the articles that had been investigated the relationship between depression and 25-hydroxy vitamin D (25[OH]D) serum concentration (nine studies), or testosterone and 25[OH]D (six studies), as the primary outcomes, were included in our review. The results of the cohort and cross-sectional studies have shown that vitamin-D deficiency is associated with the incidence of depression in older men. In addition, documents have reported the positive association between vitamin D and testosterone, and previous studies have shown that testosterone can involve in the mood. We have proposed scientific mechanisms that have shown vitamin D may also play a protective role in depression through its effect on the testosterone. Therefore, it is a low risk and safe recommendation for the middle-aged and elderly men to use the vitamin D supplement or exposure to the sunlight to prevent depression.

Keywords: 25-hydroxy vitamin D; Depressive mood; aging; andropause; men; systematic review.

Herbal & Complementary Medicine

Evidence-informed options include:

- Withania
- Tribulus
- Panax ginseng
- Fenugreek
- Damiana
- Tongkat Ali
- Shilajit
- Schisandra & St Mary's Thistle
- Cal D-Gluc & Sulforaphane

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Case Reports > Am J Mens Health. 2024 Nov-Dec;18(6):15579883241304570.
doi: 10.1177/15579883241304570.

Optimizing Testosterone Levels and Fertility Outcomes: A Case Series on the Impact of *Lepidium peruvianum* (Maca-OG™) in Andropause and Sperm Dysfunction

Kim Ross [1 2 3 4], Corey Schuler [1 2 5 6], Marc Sklar [2 7 8 9]

Affiliations + expand

PMID: 39651557 PMCID: PMC11626678 DOI: 10.1177/15579883241304570

Abstract

Low testosterone levels in men contribute to altered sexual health, including low libido, erectile dysfunction, impaired sleep, and changes in mood and energy. Nearly half of all infertility cases are implicated by male factors, such as low testosterone levels and altered semen and sperm health. The purpose of this case series is to share the experience of two men taking a concentrated, highly bioavailable gelatinized form of specific phenotypes (sometimes referred to as colors) of *Lepidium peruvianum* (Maca-OG™) to improve reproductive health. One man experienced an increase in total testosterone levels and fertility parameters, including sperm concentration, sperm motility, and total sperm count. The second experienced an increase in total testosterone levels, energy, mood, and sleep. This case series highlights a natural alternative for male health to support the body's production of testosterone, especially when hormone therapy is not medically indicated or desired by the patient, or there are concerns about hormone therapy reducing the body's production of testosterone.

Keywords: Lepidium peruvianum; case series; fertility; maca; reproductive health; testosterone.

> Biomed Pharmacother. 2025 Aug:189:118297. doi: 10.1016/j.biopha.2025.118297.
Epub 2025 Jun 28.

Salvia miltiorrhiza activates Nrf2/HO-1 signaling and restores steroidogenesis in Leydig TM3 cells and an aging rat model

Junho Yu [1], Sanjay [2], Varun Jaiswal [3], YoungSun Jang [4], Miey Park [5], Hae-Jeung Lee [6]

Affiliations + expand

PMID: 40582100 DOI: 10.1016/j.biopha.2025.118297

Abstract

Male aging is often accompanied by a gradual decline in testosterone production, referred to as andropause, which is associated with fatigue, reduced libido, hormonal imbalances, and metabolic disturbances. Testosterone replacement therapy poses risks such as prostate and cardiovascular complications, prompting interest in natural alternatives. This study explored the therapeutic effects of Salvia miltiorrhiza extract (SME) in an in vitro H_2O_2-induced Leydig TM3 cell model and an in vivo aged rat model. HPLC/MS analysis confirmed the presence of tanshinone IIA (10.629 mg/g) in SME. SME (1-2 μg/mL) attenuated oxidative stress, restored antioxidant gene and protein expression (Nrf2, HO-1, SOD, CAT, and GPx), and enhanced the steroidogenic pathway by upregulating STAR, CYP11A1, CYP17A1, 3β-HSD, and 17β-HSD while downregulating 5α-reductase. In aged rats, oral administration of SME (particularly 50 mg/kg) restored testosterone, LH, FSH, and progesterone levels, while reducing SHBG and DHT levels. SME also improved liver function markers (ALT and AST) and lipid profiles (TG, TC, LDL, and HDL), and reduced MDA and serum PSA levels. Also, HPLC/MS analysis detected the presence of tanshinone IIA in the serum of SME-administered animals. Furthermore, fecal microbiome analysis revealed an abundance of the propionate-producing microbe Succinispira mobilis, indicating a possible role of SME in improving gut health and hormone levels. These findings suggest that SME may serve as a promising natural intervention against andropause by regulating oxidative stress, steroidogenesis, and gut dysbiosis.

Keywords: Andropause; Oxidative stress; Salvia miltiorrhiza; Tanshinone IIA; Testosterone.

J Med Food. 2024 Aug;27(8):740-748. doi: 10.1089/jmf.2023.k.0332. Epub 2024 Jul 3.

Improvement in Testosterone Production by *Acorus gramineus* for the Alleviation of Andropause Symptoms

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Affiliations + expand

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Abstract

Acorus gramineus has a number of beneficial effects, including protective effects against age-related disorders. In this study, the effects of *A. gramineus* on testosterone production and andropause symptoms were evaluated. We first treated TM3 mouse Leydig cells, responsible for testosterone production, with *A. gramineus* aqueous extract at different concentrations. In TM3 cells, the testosterone concentration increased in a concentration-dependent manner compared with those in the control. In addition, at 400 μg/mL extract, the mRNA expression level of the steroidogenic enzyme *CYP11A1* was increased. Subsequently, 23-week-old Sprague-Dawley (SD) rats exhibiting an age-related reduction in serum testosterone (approximately 80% lower than that in 7-week-old SD rats) were administered *A. gramineus* aqueous extract for 8 weeks. Serum total testosterone and free testosterone levels were higher and serum estradiol, prostate-specific antigen levels, and total cholesterol levels were lower in the AG50 group (*A. gramineus* aqueous extract 50 mg/kg of body weight/day) than in the OLD (control group). The AG50 group also showed significant elevations in sperm count, grip strength, and mRNA expression of *StAR*, *CYP11A1*, *17β-HSD*, and *CYP17A1* compared with those in the OLD group. In conclusion, *A. gramineus* aqueous extract facilitated steroidogenesis in Leydig cells, elevated testosterone levels, lowered serum estradiol and total cholesterol levels, and increased muscle strength and sperm count, thus alleviating the symptoms of andropause. These findings suggest that *A. gramineus* aqueous extract is a potentially effective therapeutic agent against various symptoms associated with andropause.

J Med Food. 2021 Jun;24(6):617-625. doi: 10.1089/jmf.2021.K.0021.

Standardized Saw Palmetto Extract Directly and Indirectly Affects Testosterone Biosynthesis and Spermatogenesis

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PMID: 34161166 DOI: 10.1089/jmf.2021.K.0021

Abstract

We investigated whether a standardized saw palmetto extract (SP, mixture of supercritical extract and ethanol extract at a ratio of 9.5 to 0.5) can relieve the symptoms of andropause, including metabolic syndrome, and decreases in muscle endurance and spermatogenesis, in old rats. Twenty-four-week-old male Sprague Dawley rats received oral supplementation of SP at 40, 80, and 160 mg/kg body weight (bw) for 4 weeks. We found that SP supplementation reduced body weight gain by decreasing visceral and epididymal fat weights and the levels of serum triglycerides, total cholesterol, and low-density lipoprotein/very low-density lipoprotein cholesterol. In addition, SP supplementation increased muscle endurance, sperm counts, and testosterone biosynthesis through hormonal regulation. In Leydig cells under hydrogen peroxide-induced oxidative stress, SP treatment directly induced testosterone biosynthesis by activating the mRNA expression of the genes encoding 17,20-desmolase and 3β-hydroxysteroid dehydrogenase 4. In conclusion, our results suggest that supplementation of SP may be useful for alleviating the symptoms of andropause *via* direct and indirect regulation of testosterone biosynthesis.

Keywords: aging; andropause; saw palmetto extract; spermatogenesis; testosterone.

Randomized Controlled Trial > Maturitas. 2021 Mar:145:78-85.
doi: 10.1016/j.maturitas.2020.12.002. Epub 2020 Dec 10.

A 6-month, double-blind, placebo-controlled, randomized trial to evaluate the effect of Eurycoma longifolia (Tongkat Ali) and concurrent training on erectile function and testosterone levels in androgen deficiency of aging males (ADAM)

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PMID: 33541567 DOI: 10.1016/j.maturitas.2020.12.002

Abstract

Background: Androgen deficiency of aging males (ADAM) largely manifests as sexual symptoms. Erectile dysfunction is one of the most common symptoms of ADAM.

Aim: To ascertain the effect of concurrent training and supplementation with Eurycoma longifolia on erectile function and testosterone levels in men with ADAM, and the association of erectile function with levels of total testosterone.

Methods: 6-month, randomized, double-blind, placebo-controlled four-arm clinical. 45 men (47.38 ± 5.03 years) were randomized into 4 groups (G1: control + placebo; G2: control + Eurycoma longifolia; G3: concurrent training + placebo; G4: concurrent training + Eurycoma longifolia). 22 received a 200 mg supplement of Eurycoma longifolia and 23 underwent the intervention with concurrent training, 3 times a week for 60 min at progressive intensity.

Outcomes: International Index of Erectile Function (IIEF-5), Aging Male Scale (AMS) and total testosterone.

Results: Erectile function demonstrated improvements in both interventions; however, the most significant results were obtained by men allocated to concurrent training + Eurycoma longifolia.

Clinical implications: A 200 mg supplement of Eurycoma longifolia and the practice of concurrent training for 6 months significantly improved the erectile function of men with ADAM.

Strengths & limitations: The study's design stands out as a strength, in addition to the six-month intervention. The main limitation is the study not having groups that used only Eurycoma longifolia and only concurrent training.

Conclusion: The combination of Eurycoma longifolia and concurrent training improved erectile function and increased total testosterone levels in men with ADAM.

Keywords: Androgen deficiency; Erectile dysfunction; Exercise; Men; Supplementation.


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Epub 2023 Sep 11.

Do "testosterone boosters" really increase serum total testosterone? A systematic review

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Affiliations + expand

PMID: 37697053 DOI: 10.1038/s41443-023-00763-9

Abstract

Testosterone boosters are heavily marketed on social media and marketplaces to men with claims to significantly increase testosterone. Lax industry regulation has allowed sales of supplements to thrive in the absence of verification of their purported benefits. Our primary objective was to systematically review all data published in the last two decades on testosterone boosters and determine their efficacy. Our outcome of interest was total testosterone increase versus placebo in four different populations: male athletes, men with late-onset hypogonadism infertile men and healthy men. Following search and screening, 52 studies were included in our review, relating to 27 proposed testosterone boosters: 10 studies of cholecalciferol; 5 zinc/magnesium; 4 Tribulus terrestris and creatine; 3 Eurycoma longifolia and Withania somnifera; 2 betaine, D-aspartic acid, Lepidium meyenii and isoflavones; while the remainder were single reports. Our findings indicate that most fail to increase total testosterone. The exceptions were β-hydroxy β-methylbutyrate and betaine, which can be considered effective for male athletes. Eurycoma longifolia, a blend of Punica granatum fruit rind and Theobroma cacao seed extracts (Tesnor™) and purified Shilajit extract (PrimaVie™) can be considered possibly effective for men with late-onset hypogonadism; Eurycoma longifolia and Withania somnifera possibly effective for healthy men; and a non-hormonal aromatase inhibitor (Novadex XT™) possibly effective for male athletes.

Medical Treatment Options

May be indicated where deficiency is significant and symptomatic.

Testosterone Replacement Therapy may be delivered via:

- Injections
- Gels
- Patches
- Implants
- Bio Identical from IGP – Great Option for Collaboration

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Andropause represents a convergence of hormonal, metabolic, cardiovascular and psychosocial change, yet remains one of the least discussed transitions in modern healthcare.
Naturopaths & Integrative practitioners play a key role in recognition and support.
Carla Wrenn.
Integrative Naturopathic Practitioner

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