

# What Is Considered Low Sex Hormone Binding Globulin

*The efficacy and safety of anti-androgens in the management of ... - News-Medical.Net*

*Male- and female-specific reproductive risk factors across the ... - BMC Medicine*

**Alpha Tonic Reviews: Clinically-Researched Ingredients for Men or ... - Peninsula Daily News**

**Can Supplements Help Balance Your Hormones? - Verywell Health**

**Testosterone Loss in Aging Men May Increase Risk of Cognitive ... - Pharmacy Times**

Does Masturbation Decrease Testosterone? Here's the Reality. - Men's Health

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*Sex-specific Mendelian randomisation to assess the causality of sex ... - Nature.com*

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**Sex hormone-binding globulin level may predict liver fibrosis for ... - Healio**

**New data on how intermittent fasting affects female hormones | UIC ... - UIC Today**

Plant-based diet may aid in preventing, treating endometriosis - Healio

**The hepato-ovarian axis: genetic evidence for a causal association ... - BMC Medicine**

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*Testosterone therapy may benefit men with diabetes and obesity ... - Healio*

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**6 High-Estrogen Foods Men Should Avoid - BOXROX**

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The increased risk of colorectal cancer in the women who ... - BioMed Central

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**Effects of smoking, alcohol, and coffee on female reproductive health - Contemporary Obgyn**

[Low sex hormones may increase likelihood for transition to diabetes ...](#) - Healio

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[Best Steroids to Get Big Quick - Top Steroid Stack to Quickly Gain ...](#) - Dailyuw

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[Top 7 Best Testosterone Boosters to Consider for Muscle Growth in ...](#) - Renton Reporter

**The 13 Best Testosterone Booster Supplements Worth Trying (Top ...** - Homer News

[Sex hormone-binding globulin may be biomarker for CVD risk in men](#) - Medical Xpress

[Age-related loss of chromosome Y is associated with levels of sex ...](#) - Science

**A 65-Year-Old Man With Hypertension, COPD, Type 2 Diabetes ...** - Consultant360

[Relationship between serum sex hormones, vitamin D, and AGA ...](#) - Dove Medical Press

**The relationship between serum sex hormone and cardiac ...** - Nature.com

**Caring for Patients With Disordered Eating** - Medscape

**Free Testosterone: What It Is & What It Does for You** - Men's Health

[9 Causes of Low Libido and How to Treat It](#) - Livestrong

**What Can (and Can't) Cause Low Testosterone** - Health Essentials

**Nutritional Supplements in Pain Practice** - MedCentral

**ErecPrime Reviews - Scam or Legit Male Enhancement ...** - Bainbridge Island Review

**How effective is the keto diet for managing PCOS?** - News-Medical.Net

**Investigating sex-specific associations of lipid traits with type 2 ...** - Cardiovascular

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**Hyperthyroidism and menstrual cycle: Periods, fertility, and more** - Medical News Today

**10 Testosterone-Killing Foods: Benefits, Risks, Recipes** - Healthline

[Medicinal Leeches to Aid in Post-procedural Hematoma Evacuation](#) - Cureus

[\[Review\] Should You Avoid Red Boost Powder at All Costs? \(Urgent ...](#) - Kitsap Daily News

**Testosterone — What It Does And Doesn't Do** - Harvard Health

**Is there an association between diabetes and breast cancer risk?** - News-Medical.Net

**Red Boost Powder Reviews - Does It Work? What They Won't Tell ...** - The Daily World

[Fertility - how to understand your body and your hormones](#) - Stylist Magazine

**A Rare Case of Hyperandrogenism Due to Fibrothecoma and ...** - Cureus

[The Role of Testosterone in Women's Health](#) - News-Medical.Net

[Eating a Plant-Rich Diet May Help Against Endometriosis, Finds ...](#) - Physicians Committee for Responsible Medicine

**Performance CBD Gummies Review - Obvious Hoax or Real Male ...** - Enumclaw Courier-

Herald

**Separate and combined effects of famine exposure and menarche ... - BioMed Central**

*Phthalate exposure linked to lower SHBG, higher risk for obesity in ... - Healio*

**Podcast #893: Optimize Your Testosterone - Art of Manliness**

Fasting Versus Non-Fasting Total Testosterone Levels in Women ... - Cureus

Non-alcoholic fatty liver disease is associated with ... - Nature.com

*Hormone Testing and Replacement in Pain Patients Made Simple - MedCentral*

**Flaxseed supplementation could benefit PCOS sufferers and older ... - NutraIngredients-Asia**

### **Combined Estrogen-progestogen Contraceptives and Combined Estrogen-progestogen Menopausal Therapy - IARC**

Working Group on the Evaluation of Carcinogenic Risks to Humans 2007  
Oral contraceptives for family planning worldwide have revolutionized the reproductive lives of millions of women since their introduction in the 1960s. Later on, a variety of side-effects including cardiovascular diseases was recognized. In response to these concerns, new generations of combined oral contraceptives were developed that featured lower dose of estrogen and newer, more potent progestogens. The effectiveness and ease of use of combined hormonal contraceptives suggest that they will continue to be used to a significant extent in the future. This ninety-first volume of IARC Monograph.

**The Effects of Soy Protein and Probiotics on Isoflavone and Hormone Metabolism in Postmenopausal Breast Cancer Survivors and Women with No Cancer History - Jennifer Ann Nettleton 2003**

**MEN'S HORMONES MADE EASY!: How to Treat Low Testosterone, Low Growth Hormone, Erectile Dysfunction, BPH, Andropause, Insulin Resistance, Adrenal Fatigue, Thyroid, Osteoporosis, High Estrogen, and DHT! - J.M. Swartz M.D. 2015-03-09**

[Learn how to] prevent and reverse menopause, prostate issues, heart disease, and cancer. See how hormone issues at any age may wreck your relationship, make you fat, and accelerate aging and death. Learn how to safely improve your sexual performance, increase your energy, motivation, and sex drive, and strengthen muscles and bones. ... [This book] will show you

how to create the kind of lifelong health that will allow you to pursue your passions in life. You will look great, feel great, lose weight, and have better sex! --Page 4 of cover.

**Male Hypogonadism - Stephen J. Winters 2003-12-12**

Recent advances in cellular and molecular biology have markedly increased our understanding of normal and abnormal hypothalamic-pituitary-testicular function. Like other volumes in the Contemporary Endocrinology series, the goal of Male Hypogonadism: Basic, Clinical, and Therapeutic Principles is to link current knowledge of basic biology to the practice of medicine. The development of new methods for testosterone replacement has substantially increased the number of men who are seeking to determine whether they are hypogonadal, and who are using testosterone replacement therapy, thus mandating a broader understanding of testosterone deficiency. The chapters of this book were contributed by authors from around the world, and from various scientific and clinical disciplines, who have devoted their careers to the study of the physiology and pathophysiology of the male. Thus, this comprehensive and focused volume is intended for a wide audience encompassing both basic scientists and practicing clinicians. Its scope will provide a wealth of information for students and fellows as well.

**The Genetics of Sex Hormones and Their Effects on Mammographic Density in Women - Cameron B. Haas 2021**

In this work we leveraged genomic information from large-scale population-based studies to explore the relationships between three epidemiologic factors associated with breast cancer in women: 1) mammographic density, 2)

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sex hormone concentrations, and 3) body mass index (BMI). Mammographic density, which describes the proportion of dense (i.e., epithelial and stromal) tissue in the breast, is one of the strongest predictors of breast cancer in women. Women with extremely dense breasts have a 3 to 6-fold increased risk of breast cancer compared to those with primarily fatty breasts. Breast cancer is generally considered to be a primarily hormone-driven cancer, an attribute that has led to the development of effective treatment and prophylactic strategies for hormone receptor positive subtypes and cause for investigating the role of endogenous hormones in breast cancer etiology. Finally, BMI has been consistently observed to have paradoxical associations with breast cancer across menopause, with evidence of preventative effects associated with higher BMI in premenopausal women but increased risk in postmenopausal women. We first built on recent analyses that investigated the genetic architecture of testosterone and sex hormone binding globulin (SHBG) in men and women of European ancestry by conducting genome-wide association studies (GWAS) of estradiol concentrations in women. Additionally, we investigated the generalizability of previous findings in women of African ancestry. We further conducted menopausal status specific GWAS of these sex hormones to identify loci with heterogeneous effects across menopause. We found that the strongest overall genetic predictor of testosterone concentrations, located in the CYP3A7 gene, had an effect nearly twice as large in premenopausal women compared to postmenopausal women. Similarly, genetic variants in the AKR1C4 gene were strongly associated with concentrations of SHBG in premenopausal women, but not in postmenopausal women, with a 5-fold difference in effect estimates between the two. We also estimated the shared heritability across menopausal status specific hormone concentrations, and observed a relatively low genetic correlation between pre- and postmenopausal detectable levels of estradiol, whereas comparisons of pre- and postmenopausal shared heritability for SHBG and testosterone were both close to one, indicating near identical genetic architectures. We performed gene-level tests for enrichment of

genetic associations within tissue-specific gene expressions by collapsing multiple SNP-level associations in a gene while accounting for linkage disequilibrium. Using this gene-set analysis for tissue specificity we observed a change from strong adrenal gland tissue specificity of testosterone in premenopausal to adipose tissue specificity in postmenopausal women, suggesting that adiposity may play a more important role in determining circulating concentrations of testosterone after menopause. To understand the directional relationships between overall and menopausal status specific concentrations of sex hormones and BMI on mammographic dense and non-dense area we performed Mendelian Randomization analyses. We created menopausal status specific genetic instruments for SHBG, testosterone, and estradiol based on our previous work. We obtained single nucleotide polymorphisms (SNP)-specific association statistics from a recent GWAS of mammographic density of up to 27,900 women of European ancestry. Effect estimates for BMI were obtained from the largest meta-GWAS of BMI to date, comprising more than 700,000 individuals. We observed an inverse relationship between overall genetically predicted testosterone and dense area. Increasing genetically predicted BMI was strongly associated with an increase in genetically predicted non-dense area, as previously observed. However, we also observed an inverse association between genetically predicted BMI and absolute dense area, which might explain some of the reduced risk of breast cancer associated with an increase in genetically predicted BMI. Higher genetically predicted BMI was also strongly associated with decreasing SHBG concentrations, as well as increasing concentrations of testosterone. Based on the inverse-variance weighted results, we observed increasing genetically predicted BMI to be associated with a decrease in genetically predicted detectable levels of overall and premenopausal specific estradiol concentrations, but not for postmenopausal only. Multivariable MR approaches for the association of BMI and mammographic density adjusting for sex hormones did not substantively change the effect estimates of BMI. Building on the strong association between BMI and mammographic

density, we sought to identify genetic loci that interact with BMI to alter mammographic density phenotypes. We conducted genome-wide tests for the interaction between SNPs and BMI on percent mammographic density, absolute dense area, and absolute non-dense area in 14,837 women. Despite having the largest sample size to date with genetic and phenotypic data for mammographic density, we did not find any loci that reached standard Bonferroni correction for statistical significance. This work presents novel findings of the unique genetic architectures of menopausal specific concentrations of sex hormones in women and extends these findings to investigate their associations with mammographic density. We show that BMI plays an important role in determining not only non-dense area, but also dense area and a possibly separate mechanism for breast cancer etiology. Additionally, there is evidence based on our MR approaches of a regulatory role of BMI on endogenous estradiol as yet another possible pathway to tumorigenesis. We did not identify any genetic variant that has a strong modifying effect of BMI on mammographic density phenotypes. It is possible that larger studies are merited to investigate the interactions between germline genetic variants and BMI on mammographic density variation.

**The Effects of Diet and Exercise on Insulin, Sex Hormone Binding Globulin and Serum Lipids** - Sheva Beth Tessler 1995

**Testosterone** - Alexandre Hohl 2023

Even though research on testosterone is increasing, there is still much controversy regarding its physiology and clinical use. This book provides a broad overview on testosterone, from its basic features to the most recent evidence of clinical applicability. In addition, specific conditions in which testosterone play a pivotal role are discussed in detail, such as hypogonadism, misuse and abuse, puberty, cardiovascular effects and testosterone therapy. The testes are vital organs for reproduction of the human species, besides being the main source of testosterone production in men. Although not essential for survival, these singular structures represent the essence of male biological function. Testosterone is the

most important testicular androgen in men. Low serum testosterone levels are associated with cardiovascular morbidity, metabolic syndrome, type 2 diabetes mellitus, atherosclerosis, osteoporosis, sarcopenia, and mortality. Also, there is increasing evidence that serum testosterone is a major biomarker status of men's health in general. Hypogonadism in a male refers to a decrease in one or both of the two major functions of the testes: sperm production or testosterone production. These abnormalities can result from disease of the testes (primary hypogonadism) or disease of the pituitary or hypothalamus (secondary hypogonadism). Currently, the clinical features of male hypogonadism are sufficiently well-recognized, the causes are well-known, and the tests of the hypothalamic-pituitary-testicular axis are accurate enough for the diagnosis in most patients. Testosterone, the focus hormone of this book, is used in different forms and routes of administration. Several authors unravel its peculiarities and assist in choosing the most suitable form in each case, as well as the possible risks of its misuse or even abuse in men and women, seeking alternatives to help patients in this situation.

Trends in Oral Contraception - R.F. Harrison 2013-11-08

After 20 years of oral contraceptive (OC) use, epidemiological data and scientific research have led to the now accepted evidence that the most important effect produced by these drugs on humans, other than the prevention of unwanted pregnancy, is an increase in the risk of cardiovascular disease. Because the incidence of cardiovascular disease is also related to disturbances of the lipoprotein metabolism, it appears to be opportune to analyse the different aspects of the interaction between female hormones and lipoprotein (LP) metabolism. SERUM LIPOPROTEINS: METABOLISM In the serum, lipids (cholesterol (C), triglycerides (TG), and phospho lipids) are associated with peptides called apoproteins: apoproteins A-I, A-11, B, C, etc. The chylomicrons and the very low density lipoproteins (VLDL) are rich in TG and contain the Apo B-48; the low density lipoproteins (LDL) are rich in C and contain the Apo B-100; and the high density lipoproteins (HDL) are rich in proteins (Apo A-I, Apo A-II) and phospholipids.

Editors' Showcase: Obstetrics and Gynecology -  
Simcha Yagel 2023-11-24

We are pleased to present the first collection dedicated to highlighting the research of our Editorial Board, entitled Editors' Showcase: Obstetrics and Gynecology. This exclusive collection is open to Editorial Board members only, and will feature high-quality contributions from our Associate and Review Editors. Specialty Chief Editor Professor Simcha Yagel leads this initiative, supported by Assistant Specialty Chief Editor Sarah Cohen, which will focus on new insights, novel developments, current challenges, latest discoveries, recent advances, and future perspectives in the field of Obstetrics and Gynecology. The work presented here celebrates the broad diversity of research performed across the section and aims to put a spotlight on all areas of interest to our Editors.

**Androgen Deficiency in The Adult Male** -  
Malcolm Carruthers 2004-08-30

Just what is the andropause? Although acceptance of the andropause concept by the medical community is growing, it is still a hotly debated issue. But as a busy clinician you have patients to treat and you need information. So where can you find the information you need to understand, diagnose, and treat this condition? *Androgen Deficiency in the Adult Male: Causes, Diagnosis and Treatment* distills the knowledge acquired by author Dr. Malcolm Carruthers in his 25 years of research and clinical experience in diagnosing and treating the andropause into a comprehensive, detailed clinical resource. Dr. Carruthers documents the history of the search for testosterone treatment from antiquity to the awarding of the Nobel Prize to Adolf Butenandt and Leopold Ruzicka for synthesizing testosterone and patenting its production some 4,000 years later. He discusses the causes of androgen deficiency, the male menopause or andropause, and recent advances in its diagnosis. The text includes reviews of the literature in each section and a fund of bibliographic references gleaned from the author's years of research in this field. This combination of features makes *Androgen Deficiency in the Adult Male: Causes, Diagnosis and Treatment* an invaluable and practical clinical guide, a complete and detailed reference volume, and a cohesive and readable textbook.

Effect of a Low-fat, High-fiber Diet and Exercise Intervention on Breast Cancer Risk Factors and Tumor Cell Growth and Apoptosis in Vitro -  
Jenny Hong Gonzalez 2005

**Testosterone Deficiency in Men** - Hugh Jones  
2008-09-25

This book provides a background of essential knowledge on testosterone deficiency in men, including diagnosis and treatment. It also explores the associations of testosterone deficiency with organ systems and their diseases e.g diabetes, osteoporosis.

**Clinical Gynecology** - Eric J. Bieber 2015-04-23

Written with the busy practice in mind, this book delivers clinically focused, evidence-based gynecology guidance in a quick-reference format. It explores etiology, screening, tests, diagnosis, and treatment for a full range of gynecologic health issues. The coverage includes the full range of gynecologic malignancies, reproductive endocrinology and infertility, infectious diseases, urogynecologic problems, gynecologic concerns in children and adolescents, and surgical interventions including minimally invasive surgical procedures. Information is easy to find and absorb owing to the extensive use of full-color diagrams, algorithms, and illustrations. The new edition has been expanded to include aspects of gynecology important in international and resource-poor settings.

*Prevalence of Low Serum Testosterone in Men with Type 2 Diabetes Attending Two Diabetes Clinics in Durban, South Africa* - Paruk Imran  
2017

Aim: Data on the prevalence of low serum testosterone in men with type 2 diabetes mellitus (T2DM) from sub-Saharan Africa are scanty. The aim of this study was to determine the prevalence and associated risk factors of low serum testosterone in South African men with T2DM; the prevalence of androgen deficiency symptoms was also assessed. Methods: This was a cross-sectional study in men with T2DM attending two diabetes clinic in Durban. Androgen deficiency symptoms (ADS) were assessed using the Ageing Maleu2019s Symptom Scale (AMS) questionnaire. Serum total testosterone (TT), sex-hormone binding globulin (SHBG), leutinising hormone (LH), HbA1c,

fructosamine and serum lipids were measured; free-testosterone (fT) was calculated with a standard formula. The control group included men without a history of diabetes. Low serum fT (LSFT) was defined as 180 pmol/l and low TT (LSTT) as

*Bioidentical Hormone Replacement Therapy* - Rudy Dragone 2014-02-21

All through our lives we are plagued with certain truths, we are born, we live and we die. Many of us live life never really having great health. Everywhere you turn these days you hear and see more and more news and advertising about Hormone Replacement Therapies (HRTs). From large pharmaceuticals marketing the latest synthetic low testosterone replacement roll-on to celebrities extolling the virtues of Bioidentical Hormone Replacement Therapy, (BHRT) as a virtual fountain of youth. The truth is there are a lot of mistruths about the role bioidentical hormones can have in the cure of several severe symptoms; the overall wellbeing of your patients and safety concerns about their use. This book is to serve as a guide to understanding the role hormones have in assessing symptoms that may be aggravated by hormonal imbalances or deficiencies. The last half of this book contains a clinical reference guide to help healthcare practitioners check for hormonal imbalances and recommend dosing of bioidentical hormones in the treatment of their patients. The goals of this book are to: 1. Educate healthcare professionals about the role of hormones in the wellness of their patients. 2. Educate the public of the significant role hormonal imbalances can play in their overall wellness. 3. Provide the necessary tools to determine if bioidentical hormone replacement therapies are appropriate for your patients. 4. Help expand healthcare practices through referrals by happy, healthy patients and bioidentical hormone replacement therapies that improve patient lives while making sound business sense to your practice. The roll that bioidentical hormone replacement therapy has in overall wellbeing for millions of people is simply remarkable.

**Steroid-protein Interactions** - Ulrich Westphal 1971

**Androgens and the Aging Male** - B.J. Oddens 1996-11-15

While menopause in women is a well-established and well documented phenomenon, the andropause in men is a relatively new concept. The terms male menopause and andropause suggest that this is an abrupt phenomenon related to a sudden deprivation of sex hormones. Unlike the menopause, which has a relatively sudden onset, the andropause appears to be a gradual process. It has been hypothesized that an androgen deficiency might develop with aging. *Androgens and the Aging Male* explores this hypothesis. The book focuses on the gradually progressive problems related to the decline in androgens that can occur with advancement of age. It examines the debate about the extent to which an age-dependent decline in androgens leads to health problems that affect or impair the quality of life, and the theory behind it. In addition, it reviews studies evaluating the effects of androgen supplementation. *Androgens and the Aging Male* comprehensively covers androgen function and how it changes over time.

[Genetic Determinants of Human Sex Hormone-binding Globulin Expression](#) - Kevin Neil Hogeveen 2003

*Hormonal Predictors of Healthy Ageing in Older Men* - Zoe Hyde 2012

Increasing life expectancy, coupled with declining fertility rates, has resulted in an ageing of the population. By 2050, nearly one quarter of the Australian population will be aged 65 years or older. The proportion of the population aged 85 years or older is expected to triple. Because the prevalence of chronic disease and disability increases with age, this demographic transition will pose substantial challenges. Age-related declines are observed in several important endocrine systems. In men, testosterone decreases across the lifespan, and there is debate as to whether declining levels of this hormone play a role in mediating many of the age-related changes in health and functional status that occur in old age. However, there have been few wellpowered epidemiological studies to date. The aim of this thesis was to explore whether endogenous testosterone levels were associated with adverse outcomes in several key domains, including cognition, frailty, cardiovascular disease, sexual function, and

cancer. The study population comprised up to 3,638 community-dwelling men from Perth, Western Australia, participating in the longitudinal, population-based, Health in Men Study (HIMS). Testosterone, sex hormone-binding globulin, and luteinizing hormone were measured by immunoassay in a cohort of men aged 70 years or older. Outcome measures included memory (measured with the California Verbal Learning Test and Standardised Mini-Mental State Examination), frailty (assessed with the FRAIL scale, comprising questionnaire data and physical measures), mortality and cardiovascular events (assessed by electronic record linkage), sexual activity and sexual dysfunction (assessed by self-reported questionnaire), and incident cancer diagnoses (assessed by electronic record linkage). Statistical techniques included linear and logistic regression, and Cox and competing-risks proportional hazards models. Results of these analyses suggest that low testosterone and/or elevated luteinizing hormone are associated with poor memory, frailty, cardiovascular events, and cardiovascular mortality. Low testosterone levels were unrelated to mortality from causes other than cardiovascular disease, and to sexual problems other than low libido. Higher levels of testosterone were associated with increased sexual activity, and incident lung and prostate cancer. This novel association with lung cancer was maintained after exclusion of current smokers. These findings suggest that low levels of testosterone may be deleterious to many aspects of men's health. However, it remains uncertain as to whether low testosterone is merely a biomarker for illness or has a causal role in disease. Clinical trials will be required to investigate whether testosterone supplementation can prevent or ameliorate these adverse outcomes, without causing harmful effects.

### **Human Sex Hormone-binding Globulin Modulates the Biological Activity of Its Ligands in Vitro and in Vivo [microform] -**

Heather Lynne Hodgert July 2001

The regulation of sex steroid bioavailability at the target tissue level is a result of the

interaction of these hormones with plasma proteins. In particular, the interaction of sex steroids with human sex hormone-binding globulin (SHBG), a protein with high affinity and low capacity for steroids, is important in determining the bioavailability of sex steroids at the tissue level. Previous studies have shown that certain nonsteroidal compounds interact with the SHBG steroid-binding site, and I have therefore developed a screening assay to identify natural and synthetic compounds that bind SHBG. This assay uses undiluted human serum and therefore has the advantage of identifying possible interactions with other serum proteins by comparing results in this assay versus conventional assays, therefore providing insight into the factors that contribute to the bioavailability of endocrine active compounds within the body. A limited number of in vitro studies have shown that it is the non protein-bound steroid fraction that is biologically active, consistent with the free hormone hypothesis, but these studies cannot model tissue blood flow and transit time. Additionally, there is evidence that SHBG may have a direct influence on the actions of its ligands as a result of targeted delivery. Rodents are often used as in vivo models for estrogen action, however they lack SHBG in the blood as adults. I have therefore made use of transgenic mice that express human SHBG transgenes and have various levels of human SHBG in their blood to assess the effects of SHBG on estrogen action by measuring uterine hypertrophy following administration of pharmacologically relevant estrogens, and by monitoring the incidence of chemically-induced mammary tumours that are known to be estrogen-dependent. Immunohistochemical analysis of uteri harvested from these mice revealed an estrogen-dependent accumulation of SHBG in the endometrial stroma. The extracellular matrix protein fibulin-2, which is known to interact with SHBG in vitro was found to have a similar localization pattern in the mouse uterus following estrogen stimulation. These data indicate that fibulin-2 is involved in the extravascular sequestration of SHBG in the mouse uterus and that this interaction can be regulated in an SHBG ligand-dependent manner.



## What Is Considered Low Sex Hormone Binding Globulin:

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