

REPORT

Name	: Mrs. PRATIBHA DEVI	Sample ID	: 23856394
Age/Gender	: 28 Years/Female	Reg. No	: 0522209130053
Referred by	: Dr. SANGITA CHAUDHARY (MD)	SPP Code	: SPL-BH-121
Referring Customer	: AMC HOSPITAL	Collected On	: 13-Sep-2022 08: 45 AM
Primary Sample	: Whole Blood	Received On	: 14-Sep-2022 03: 04 PM
Sample Tested In	: Serum	Reported On	: 15-Sep-2022 09: 35 AM
Client Address	: FATEHPUR BYPASS ROAD, SHIVAJI NAGAR,Pincc	Report Status	: Final Report

IMMUNOLOGY & SEROLOGY

Test Name	Results	Units	Ref. Range	Method
Testosterone Free	1.20	pg/mL	0-2.85	ELISA

Interpretation :

- Most circulating testosterone is bound to sex hormone-binding globulin (SHBG), a lesser fraction is albumin bound and a small proportion exists as free hormone. Testosterone is weakly bound to serum albumin and dissociates freely in the capillary bed, and is readily available for tissue uptake.
- All non-SHBG-bound testosterone is considered bioavailable.
- During childhood, increase production of testosterone causes premature puberty in boys and masculinization in girls. In adult women, excess testosterone production can cause virilization, including hirsutism, acne, oligo-amenorrhea, or infertility.
- Common causes of pronounced elevations of testosterone include genetic conditions (eg, congenital adrenal hyperplasia); adrenal, testicular, and ovarian tumors etc.
- Decreased testosterone in females causes mild symptoms like some decline in libido and nonspecific mood changes. In males, it results in partial or complete degrees of hypogonadism.
- Measurement of total testosterone may not be sufficient for diagnosis but is helpful if it is combined with measurements of LH and follicle-stimulating hormone. However, these tests may be insufficient for diagnosis of mild abnormalities of testosterone homeostasis, particularly if abnormalities in function and levels of SHBG are present.
- Additional measurements of free testosterone or bioavailable testosterone are recommended in this situation.
- ..

Excellence In Health Care

M. Srinivas

 Murari Srinivas
 MSc Biotechnology

 Dr. Rituraj
 MD, Microbiology

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Primary Sample	: Whole Blood	Received On	: 14-Sep-2022 03: 04 PM
Sample Tested In	: Serum	Reported On	: 14-Sep-2022 04: 26 PM
Client Address	: FATEHPUR BYPASS ROAD, SHIVAJI NAGAR, Pincc	Report Status	: Final Report

CLINICAL BIOCHEMISTRY

Test Name	Results	Units	Ref. Range	Method
PRL(Prolactin)	11.61	ng/mL	Refer Table	CLIA

Interpretation:

Age	Reference Range: Male (ng/mL)	Reference Range: Female(ng/mL)
Puberty Tanner Stage		
1	< 10.0	3.6-12.0
2-3	< 6.1	2.6-18.0
4-5	2.8-11.0	3.2-20.0
Adult	2.1-17.7	Nonpregnant :2.8-29.2 Pregnant :9.7-208.5 Postmenopausal :1.8-20.3

- Prolactin is a 23kD sized hormone produced by the lactotroph cells of the pituitary gland, a grape-sized organ found at the base of the brain. Normally present in low amounts in men and non-pregnant women, prolactin's main role is to promote lactation (breast milk production).
- Breast milk production that is not related to childbirth (galactorrhea)
- Erection problems in men
- Irregular or no menstrual periods (amenorrhea)

SagePath

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*** End Of Report ***

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MC 3633

Vaishnavi
DR.VAISHNAVI
MD BIOCHEMISTRY

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CLINICAL BIOCHEMISTRY

Test Name	Results	Units	Ref. Range	Method
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Anti Mullerian Hormone (AMH) 0.55 ng/mL Refer Table CLIA

Age Ranges in Females:	Fertility Ranges:
18-25 Years: 0.96-13.34 ng/mL	Optimal Fertility: 4.0-6.8 ng/mL
31-35 Years: 0.07-7.35 ng/mL	Satisfactory Fertility: 2.2-4.0 ng/mL
41-45 Years: < 3.27 ng/mL	Low Fertility: 0.3-2.2 ng/mL
Male Reference Range: 0.73-16.05 ng/mL	

OVER VIEW:

Antimullerian hormone (AMH), also called müllerian inhibiting substance, is a glycoprotein that regulates reproductive duct development. Its presence in the fetal male causes regression of the müllerian (female) ducts which then allows for the wolffian (male) ducts to develop. AMH is produced by the Sertoli cells of the testis beginning around 6 weeks gestation; levels remain elevated until puberty. In the female fetus, the absence of AMH allows the müllerian ducts to develop into the fallopian tubes, uterus, and upper 2/3 of the vagina. The hormone is secreted by the granulosa cells of preantral and small antral follicles of the ovaries and begins to be detected around 36 weeks gestational age. AMH levels are low in female children until puberty. They typically remain constant during the reproductive years and then decline steadily with age as the number of follicles decrease. AMH is undetectable at menopause.

Clinical Significance:

- Assess gonadal function in children
- Evaluation of infants with ambiguous genitalia and other intersex conditions.
- Evaluating testicular function in infants and children including cryptorchidism and anorchidism.
- Aid in the assessment of infrequent or absent menses, including premature ovarian insufficiency, polycystic ovarian syndrome and menopause.
- Assessing ovarian status including follicle development, ovarian reserve, and ovarian responsiveness, as part of an evaluation for infertility and assisted reproduction protocols such as in vitro fertilization (IVF).
- Assessing ovarian function prior to, during, and following gonadotoxic cancer treatment in premenopausal women.
- Diagnosing and monitoring patients with AMH-secreting ovarian granulosa cell tumors.

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CLINICAL BIOCHEMISTRY

Test Name	Results	Units	Ref. Range	Method
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TSH -Thyroid Stimulating Hormone 1.62 μ IU/mL 0.35-5.5 CLIA

Pregnancy & Cord Blood

TSH (Thyroid Stimulating Hormone (μ IU/mL)	
First Trimester	: 0.24-2.99
Second Trimester	: 0.46-2.95
Third Trimester	: 0.43-2.78
Cord Blood	: 2.3-13.2

- TSH is synthesized and secreted by the anterior pituitary in response to a negative feedback mechanism involving concentrations of FT3 (free T3) and FT4 (free T4). Additionally, the hypothalamic tripeptide, thyrotropin-releasing hormone (TRH), directly stimulates TSH production.
- TSH interacts with specific cell receptors on the thyroid cell surface and exerts two main actions. The first action is to stimulate cell reproduction and hypertrophy. Secondly, TSH stimulates the thyroid gland to synthesize and secrete T3 and T4
- The ability to quantitate circulating levels of TSH is important in evaluating thyroid function. It is especially useful in the differential diagnosis of primary (thyroid) from secondary (pituitary) and tertiary (hypothalamus) hypothyroidism. In primary hypothyroidism, TSH levels are significantly elevated, while in secondary and tertiary hypothyroidism, TSH levels are low
- TRH stimulation differentiates secondary and tertiary hypothyroidism by observing the change in patient TSH levels. Typically, the TSH response to TRH stimulation is absent in cases of secondary hypothyroidism, and normal to exaggerated in tertiary hypothyroidism
- Historically, TRH stimulation has been used to confirm primary hyperthyroidism, indicated by elevated T3 and T4 levels and low or undetectable TSH levels. TSH assays with increased sensitivity and specificity provide a primary diagnostic tool to differentiate hyperthyroid from euthyroid patients.

Testosterone Total 33.79 ng/dL Refer Table CLIA

(Testosterone Reference Ranges)		
Age	Reference Range Male(ng/dL)	Reference Range Female(ng/dL)
Newborn(1-15days)	75-400	20-64
1-5 Months	1-177	1-5
6-11 Months	2-7	2-5
Children:		
1-5 Year	2-25	2-10
6-9 Year	3-30	2-20
Puberty Tanner Stage		
1	2-23	2-10
2	5-70	5-30
3	15-280	10-30
4	105-545	15-40
5	265-800	10-40
Adult	241-827	14-76

- Testosterone is a steroid hormone (androgen) made by the testes in males. Its production is stimulated and controlled by luteinising hormone (LH), which is manufactured in the pituitary gland. In males, testosterone stimulates development of secondary sex characteristics, including enlargement of the penis, growth of body hair and muscle, and a deepening voice. It is present in large amounts in males during puberty and in adult males to regulate the sex drive and maintain muscle mass. Testosterone is also produced by the adrenal glands in both males and females and, in small amounts, by the ovaries in females. The body can convert testosterone to oestradiol, the main sex hormone in females. There is great variability in testosterone levels between men and it is normal for testosterone levels to decline as men get older. Hypogonadism in a male refers to a reduction in sperm and/or testosterone production.



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CLINICAL BIOCHEMISTRY

Test Name	Results	Units	Ref. Range	Method
LH (Leutinizing Hormone)	2.97	mIU/mL	Refer Table	CLIA

Interpretation:

Age	Reference Range: Male (mIU/mL)	Reference Range: Female(mIU/mL)
Pre Puberty Child		
2-11 Months	0.02-8.0	0.02-8.0
1-10 Years	0.04-3.6	0.03-3.9
Puberty Tanner Stage		
1	0.04-3.6	0.03-3.0
2	0.26-4.8	0.10-4.1
3	0.56-6.3	0.20-9.1
4-5	0.56-7.8	0.50-15.0
Adult	20–70 years:1.5–9.3 > 70 years:3.1–34.6	
Follicular Phase	----	1.9–12.5
Midcycle Peak	----	8.7–76.3
Luteal Phase	----	0.5–16.9
Postmenopausal	----	15.9–54.0
Pregnant	----	< 0.1–1.5
Contraceptives	----	0.7–5.6

Increased Values Of LH Seen In:

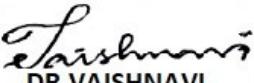
- Menopause,ovarian dysgenesis. (Turner syndrome),Testicular dysgenesis (Klinefelter syndrome).
- Precocious puberty

Decreased Values Of LH Seen In:

- Pituitary failure. Both LH/ FSH are low.
- hypothalamic failure will also lead to low LH and FSH level.

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CLINICAL BIOCHEMISTRY

Test Name	Results	Units	Ref. Range	Method
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Estradiol-(eE2) 48.59 pg/mL Refer Table CLIA

Age	Reference Range: Male(pg/mL)	Reference Range: Female(pg/mL)
Puberty Tanner Stage		
1	3-15	5-10
2	3-10	5-115
3	5-15	5-180
4	3-40	25-345
5	15-45	25-410
Adult	0-39.8	
Follicular Phase	----	19.5-144.2
Midcycle Peak	----	63.9-356.7
Luteal Phase	----	55.8-214.2
Postmenopausal	----	0-32.0

An estradiol test measures the amount of a hormone called estradiol in the blood. Estradiol is one of the main types of estrogens.

In women, most estradiol is released from the ovaries and adrenal glands. It is also released by the placenta during pregnancy. Estradiol is also produced in other body tissues, such as skin, fat, cells bone, brain, and liver. Estradiol plays a role in:

- Growth of the womb (uterus), fallopian tubes, and vagina
 - Breast development
 - Menopause
 - In men, a small amount of estradiol is mainly released by the testes. Estradiol helps prevent sperm from dying too early.
- This test may be ordered to check:
- How well your ovaries, placenta, or adrenal glands work
 - If you have signs of an ovarian tumor
 - If your periods have stopped (levels of estradiol vary, depending on the time of month)



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Test Name	Results	Units	Ref. Range	Method
FSH (Follicle Stimulating Hormone)	9.33	mIU/mL	Refer Table	CLIA

Interpretation:

Age	Reference Range: Male (mIU/mL)	Reference Range: Female(mIU/mL)
Pre Puberty Child		
2-11 Months	0.19-11.3	0.10-11.3
1-10 Years	0.3-4.6	0.68-6.7
Puberty Tanner Stage		
1-2	0.30-4.6	0.68-6.7
3.-4	1.24-15.4	1.0-7.4
5	1.53-6.8	1.0-9.2
Adult	1.42-18.4	
Follicular Phase	----	2.5-10.2
Midcycle Peak	----	3.4-33.4
Luteal Phase	----	1.5-9.1
Postmenopausal	----	23.0-116.3
Pregnant	----	< 0.3

The follicle stimulating hormone (FSH) blood test measures the level of FSH in blood. FSH is a hormone released by the pituitary gland, located on the underside of the brain.

Low FSH levels in women may be present due to:

- Being very underweight or having had recent rapid weight loss
- Not producing eggs (not ovulating)
- Parts of the brain (the pituitary gland or hypothalamus) not producing normal amounts of some or all of its hormones
- Pregnancy

High FSH levels in men may mean the testicles are not functioning correctly due to:

- Advancing age (male menopause)
- Damage to testicles caused by alcohol abuse, chemotherapy, or radiation
- Certain tumors in the pituitary gland

Correlate Clinically.

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