

## BIO-IDENTICAL HORMONES THE EFFECT OF NUTRITION ON HORMONE BALANCE Dr Miguel Martinez

### OBJECTIVES

- TO LEARN A PRACTICAL METHOD TO BALANCE ENDOGENOUS PRODUCTION OF INSULIN AND GLUCAGON.
- UNDERSTAND HOW TO AVOID DIET INDUCED HYPERINSULINAEMIA AND HYPERGLYCAEMIA AND ITS EFFECTS.
- HOW TO IDENTIFY SYMPTOMS OF UNBALANCED NUTRITION.
- LEARN SIGNS AND SYMPTOMS OF SEX HORMONE INBALANCES IN MEN AND WOMEN.
- LEARN HOW TO DIAGNOSE AND MANAGE SEX HORMONE DEFICIENCIES WITH BIO IDENTICAL HORMONES.
- IDENTIFY PROS AND CONS OF BIOIDENTICAL AND NON BIOIDENTICAL SEX HORMONES.

## PALEOLITIC ZONE DIET

### HORMONAL BALANCE

(INSULIN/GLUCAGON= 1/1 RATIO)

INSULIN – METAB CH AND FAT

GLUCAGON – METAB. PROT

DIET **40-30-30**

5 MEALS/DAY = 3 MAIN + 2 SNACKS

## CALCULATING INDIVIDUAL MACRONUTRIENT NEEDS

1. IMPEDANCIOMETER
2. FORMULA

### 2.1 FATTY MASS

MEN ABD - WRIST

Weight tables

WOMEN HIP (A) + ABD (B) –

Height (C) TABLES

= % BODY FAT

FATTY MASS = Weight per % body fat

### 2.2 MEAN MASS

MEAN MASS = Weight per Fatty mass

### 2.3 DAILY AMOUNT OF PROTEIN REQUIREMENT

PROT = MEAN MASS per Activity factor

## PHYSICAL ACTIVITY FACTOR

SEDENTARISM	1.10
LITTLE ACTIVITY	1.32
MODERATE ACTIVITY (1.5h/w)	1.54
ACTIVE (1.5 to 2.5h/w)	1.76
VERY ACTIVE (> 2.5h/week)	1.98
ELITE ATHLETE or Weight training 5 times per week	2.20

## GENERAL NUTRITIONAL RULES

HUNGER after 3-4h after a main meal:

+ LOSS CONCENTRATION (SLEEPY)

= High CH intake = High INSULIN

+ NO LOSS CONCENTRATION

= Low CH intake = Low INSULIN

Excess PROT = High cortisol and low T3

FAT = ½ MONUN + ¼ POLYUN + ¼ SAT

AA/EPA = 1-3/1 = LOW SILENT INFLAMA

## OPTIMISING RESULTS

AVOID SACAROSE / ALCOHOL -

REDUCES ALL HORMONES

USE FRUCTOSE AS SWEETENER

AVOID ANIMAL MILKS & DAIRY -

REDUCES THYROID/CORTISOL

THEREFORE IMMUNITY

EXERCISE - SNACK = ½ BEFORE

MAIN MEAL = during 1<sup>st</sup> hour  
after Eat CH 11s

## CARBOHYDRATES

GLYCAEMIC INDEX (GI) =

Speed of entry of glucose in the blood

GLYCAEMIC LOAD (GL) =

Amount of insulin per GI

## EQUIVALENCE BETWEEN 9gr of PURE CH AND TOTAL CH

### 1) FAVOURABLE CH – EAT DAILY

Artichokes	350g	Aubergine	350g
Onion	150g	Red cabbage	325g
Green cabb	350g	Brussel spro	200g
Coliflower	300g	Esparragus	300g
Cucumber	500g	Peppers	150g
Tomatoe	300g	Mushrooms	150g
Cheekpeas	50g	Beans	50g
Lentils	50g	Green beans	350g

Apricot	125g	Blueberries	175g
Cherries	100g	Prunes	100g
Mandarin	70g	Rapsberries	150g
Strawberries	150g	Redberries	150g
Kiwi	100g	Lemon	400g
Lichi	50g	Apple	100g
Peach	100g	Melon	100g
Orange	100g	Nectarin	100g
Pears	100g	Pineapple	100g
Watermelon	250g	Grapes	50g

### 2) UNFAVOURABLE CH = EAT IN MODERATION – ONCE A WEEK OR LESS

Rice	10g	Bread	10g
Pasta	10g	Semolina	10g
Corn	30g	Potatoes	30g
Coke	100g	Juices	100g
Beer	150g	Wine	125g
Spirits	30g	Sugar	5g
Honey	5g		

## EQUIVALENCE BETWEEN 7g PURE PROT AND TOTAL

### 1) FAVOURABLE PROT – EAT DAILY

Chicken	30g	Turkey	30g
Lamb	30g	Beef	30g
Anxovies	40g	Hering	40g
Tuna	30g	Cod	30g
Calamary	50g	Crab	40g
Seabas	30g	Prawns	50g
Lobster	50g	Salmon	40g
Muscles	60g	Egg whites	2

## EQUIVALENCE BETWEEN 1.5g PURE FAT AND TOTAL

### 1) FAVOURABLE OPTION – EAT DAILY

Olives 10g (3 units) Avocado 5g  
 Cashew 3g (3 units) Hazelnut 3g=U  
 Peanuts 3g (6 units) Walnut 1 unit  
 Macadamia 1 unit Pistacho 6 U  
 Olive oil 1/3 tea spoon = peanut oil

### 2) UNFAVOURABLE – EAT LESS 1 WEEK

Butter 2g Cream 4g  
 Cheese 40g Mayonese 2g

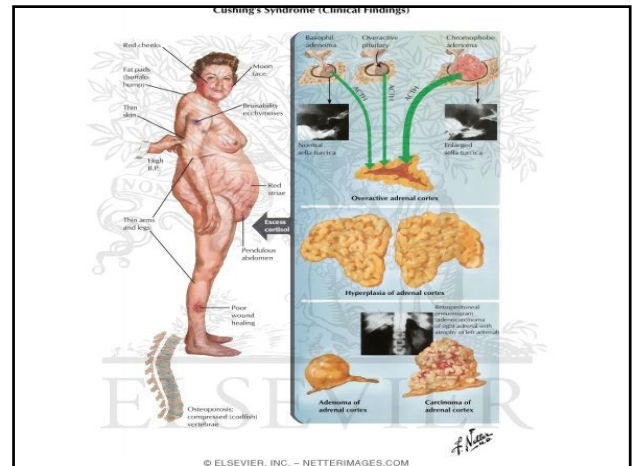
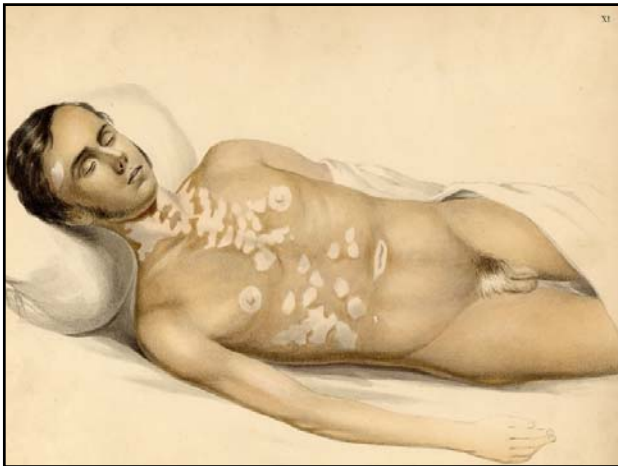
## PREDNISOLONE

	<u>MEN</u>	<u>WOMEN</u>	7-8am
Borderline	2.5	2.5	mg
Mild	5	5	
Moderate	6-7.5	7.5	

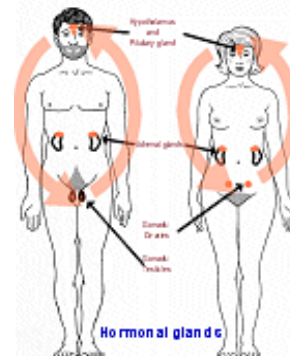
## METHYLPREDNISOLONE

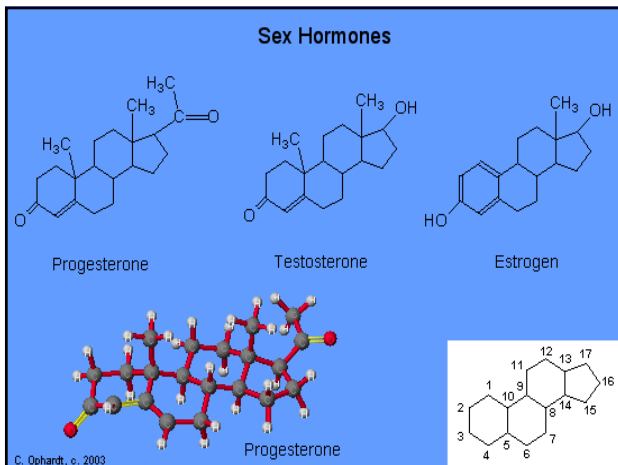
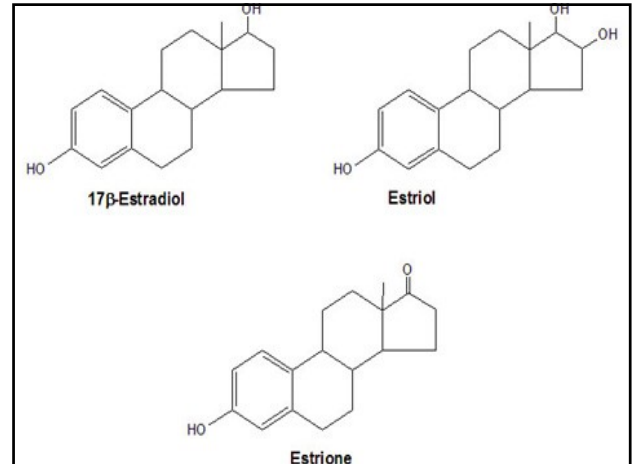
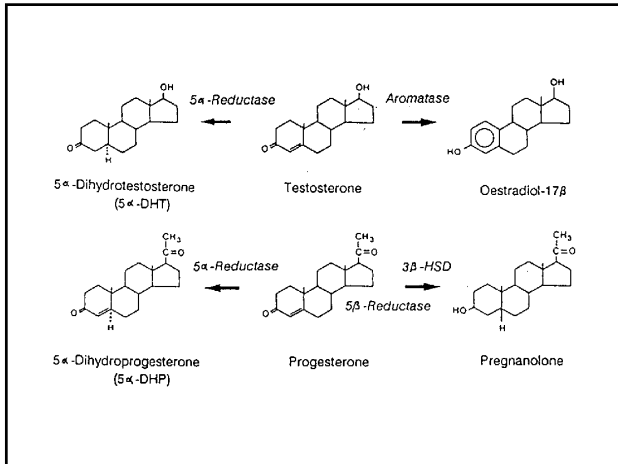
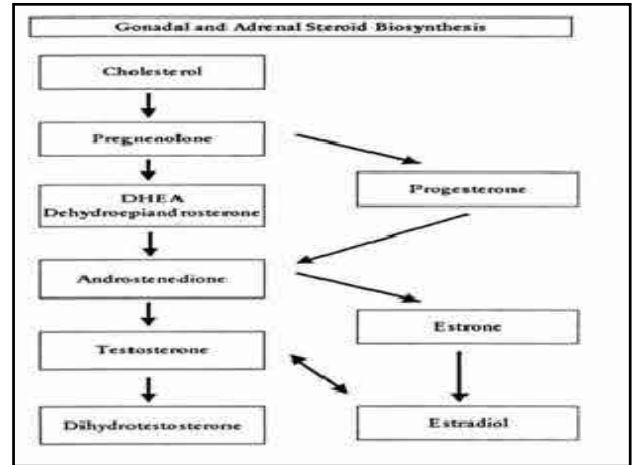
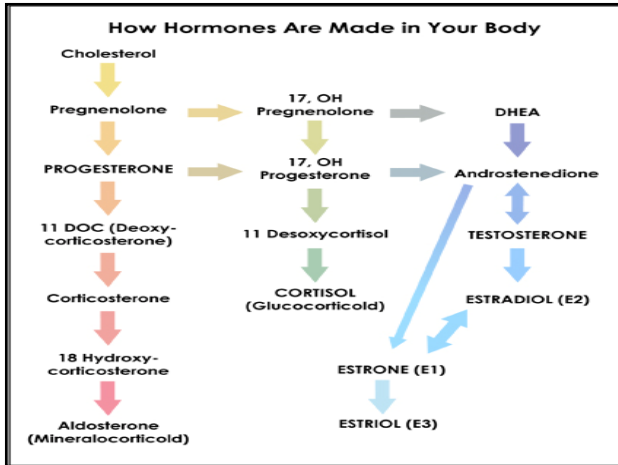
Borderline	2	2	mg
Mild	4	4	
Moderate	6-8	6-8	

HIRSUTISM DEXAMETHASONE 0.1-0.5mg



## SEX HORMONES





### Victims Speak Out:

**ESTROGENS**

**LOW**

**HIGH**

"Everywhere I go, people look at me like I'm an outcast—or worse, don't look at me at all."  
Sarah Lahey, 30-A

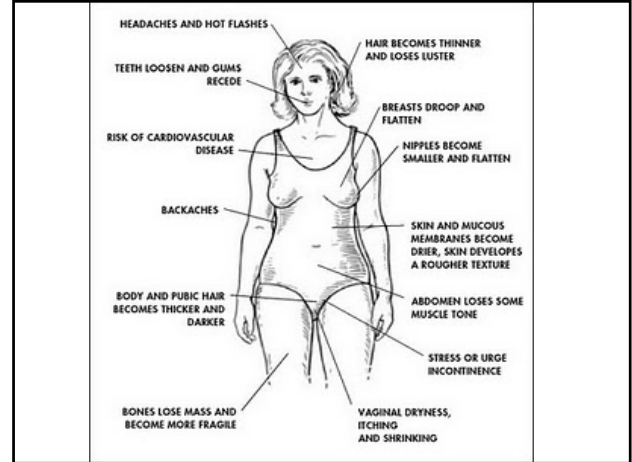
"Something needs to be done about my tiny breasts, and soon!"  
Nicole Walburn, 33-B

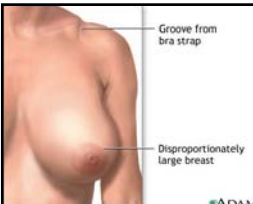
"To be honest, I haven't really noticed a problem."  
Victoria Holmgren, 36-DD

# OESTROGEN & PROGESTERONE DEFICIENCIES IN WOMEN

## SYMPTOMS

- |                            |                              |
|----------------------------|------------------------------|
| <u>E2</u>                  | <u>P4</u>                    |
| Polymenorrhoea             | Menorrhagia                  |
| Amenorrhoea                | Mastalgia +                  |
| Hot Flashes & Night sweats | Abd bloatedness + Heavy legs |
| Vaginal + skin dry         | = <u>PMT</u>                 |
| General aches              |                              |
| Poor libido                |                              |
| Depression                 |                              |
| Memory loss                |                              |

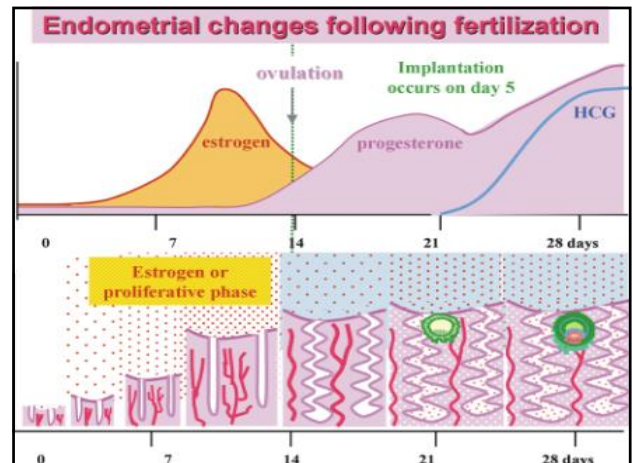
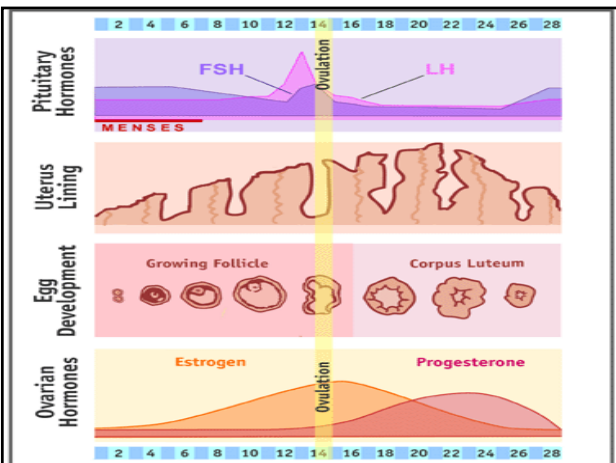
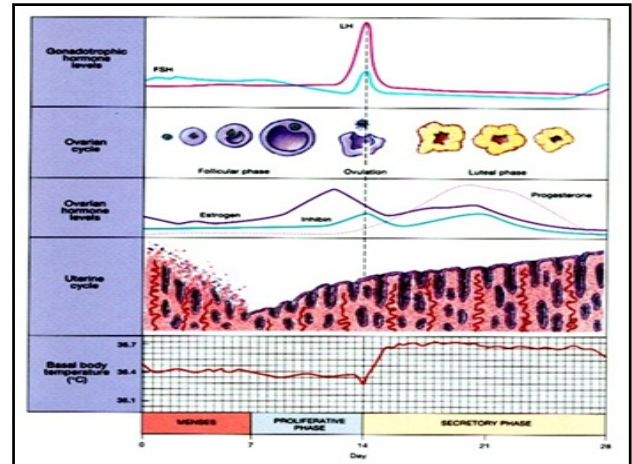




## PHYSICAL SIGNS

P4

<u>E2 &gt; P4</u>	Micromastia	Macromastia
	Breast ptosis	Breast cysts
	Dry skin	Oedema
	Small & sharp wrinkles	Ovarian cysts
	Pale face	Fybroids
		Red face





**DISEASE SUSCEPTABILITY**

- OESTROGEN DEFICIENCY  
CVD, ALZHEIMER'S DISEASE, INFERTILITY  
OSTEOPAENIA, OSTEOPOROSIS,
- PROGESTERONE DEFICIENCY  
Ca BREAST & Cysts, ovarian cysts,  
uterine fibroids, ENDOMETRIOSIS,  
endometrial Ca & hyperplasia, INFERTILITY,  
Miscarriage, Premature Labour, Pre-eclampsia

**COMPLEMENTARY EXAMINATIONS**

1.- LAB TESTS

a) BLOOD

FSH	Pre-Men	3-5 IU/L	Any day
	Post-Men	20-50 IU/L	Any day
OESTRADIOL	150	Day 21 cycle	
PROGESTERONE	13-23	Day 21 cycle	
SHBG	65	Any day	

b) URINE 24 HOURS

2-OH-OESTRONE	+5mcg
16-OH-OESTRONE	0-1.3mcg
2/16-OH-E1	Less than 2 for good Ca Breast risk
PREGNANDIOL	5-7mg on day 21 cycle

2.- ECOGRAPHY/MAMMOGRAPHY

**TREATMENT**

OESTRADIOL 0.6mg/g Liposomal Gel  
1-4 pumps in the morning  
Pre-men: 5-25 day cycle  
Post- men: 1-25 day cycle

PROGESTERONE 50-200mg Nochte  
Micronised oral Pre-men: 15-25 day cycle  
Post-men: 1-25  
If menses 13-25

**TESTOSTERONE DEFICIENCY IN WOMEN**

**SYMPTOMS**

Whole day fatigue  
Hysterical reactions  
Unnecessary worry  
Excessive emotions and low resist stress  
Decreased libido & orgasm  
Clitoris & nipple sensitivity

**PHYSICAL SIGNS**

Pale skin  
Cellulite  
Varicose veins  
Poor muscle volume, tone & strength  
Dry eyes

## DISEASE SUSCEPTIBILITY

ARTERIOSCLEROSIS  
OSTEOPOROSIS  
OA, RA  
DEPRESSION & ANXIETY DISORDERS

## COMPLEMENTARY EXAMINATIONS

### LAB TESTS

#### BLOOD

TOTAL TESTOS 35ng/dl or 1.2mmol/L  
FREE TESTOS 8pg/ml or 28 pmol/L  
SHBG 65 pmol/L  
Androstenediol 3-3.9 ng/ml or 10-23mmol/L  
glucuronide

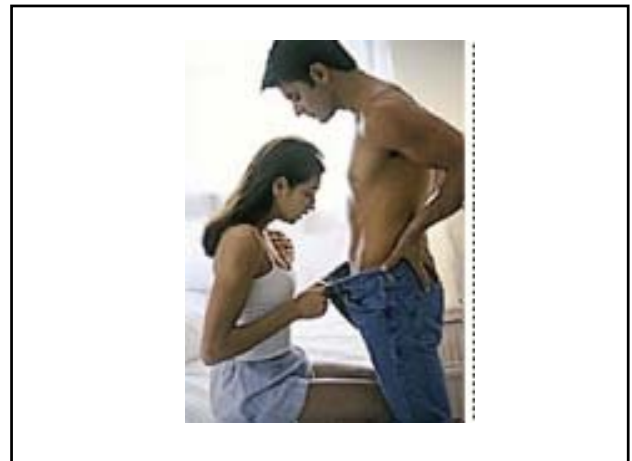
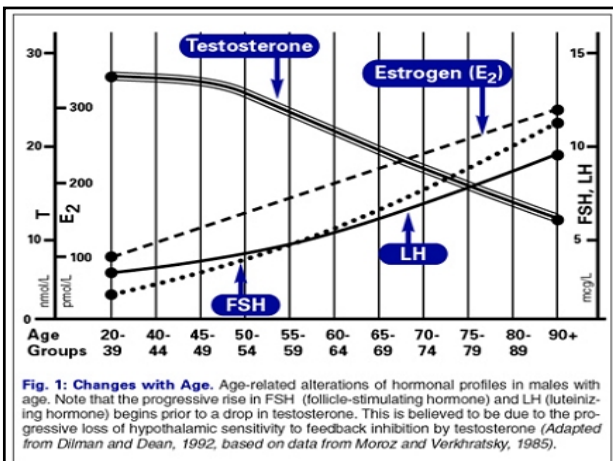
## TREATMENT

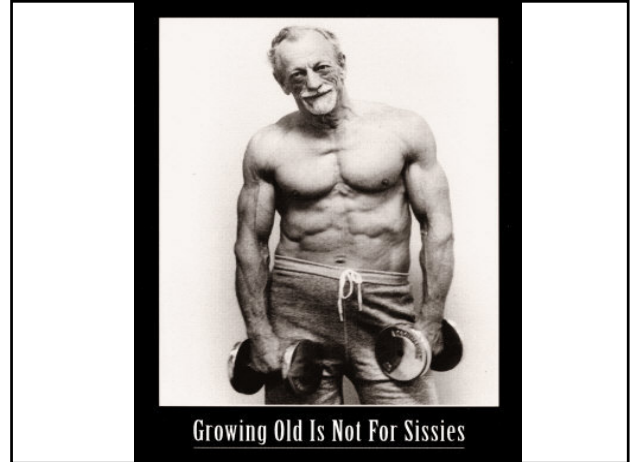
TESTOSTERONE 10mg/g 2.5-10g morning  
Microsomal gel  
Also applicable for women with low libido

## TESTOSTERONE DEFICIENCY IN MEN

### SYMPTOMS

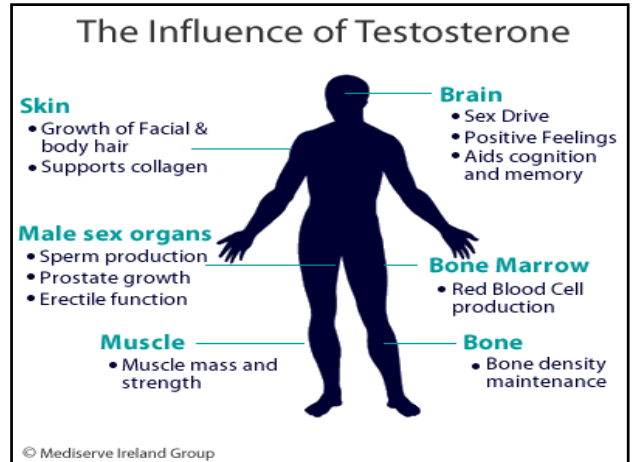
Whole day fatigue  
Reduced libido  
Reduced erections in quantity & quality  
Loss of initiative & interest in life  
Loss of self confidence  
Depression  
Aging appearance





### PHYSICAL SIGNS

- Increased abdominal fat
- Decreased muscle mass and strength
- Pale
- Small wrinkles corner eyes, lips, palms
- Longitudinal nail lines
- Peyronie's disease



### DISEASE SUSCEPTABILITY

- CVD – Angina, MI, hypertension, hypercholesterolemia, thrombosis
- ALZHEIMER'S DISEASE
- DEPRESSION
- OBESITY & DM type 2
- OSTEOPOROSIS
- Poor Wound healing

### COMPLEMENTARY EXAMINATIONS

#### 1.- LAB TESTS

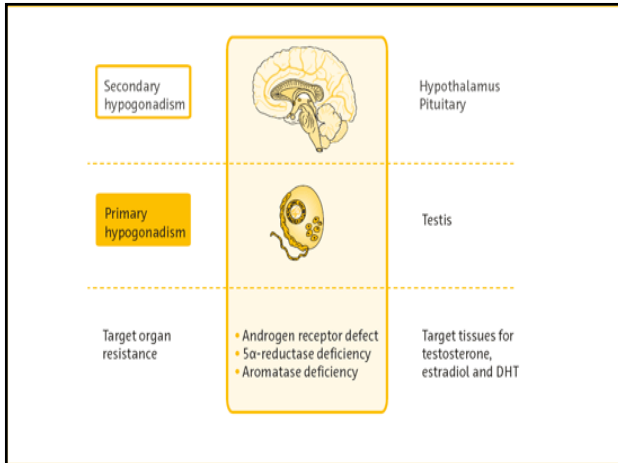
##### a) BLOOD (8-10 am NO EXERCISE or SEX 24 before)

- TOTAL TESTOS 700 ng/dl or 24 mmol/L
- AG 15-18 ng/dl or 50-59 mmol/L
- SHBG 2.3-2.8 mg/L or 25-30 pmol/L
- DHT (if alopecia) 70 ng/dl or 2.4 mmol/L
- PSA / PROLACTIN / FSH / LH

##### b) URINE 24 HOURS

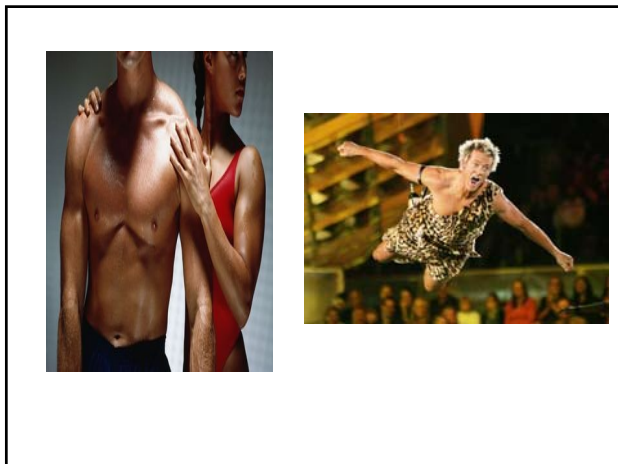
- FREE TESTOS 120mcg or 0.4 mmol/L
- 17-keto-steroids 0-9 mg or 0-30 mcmol





## TREATMENT

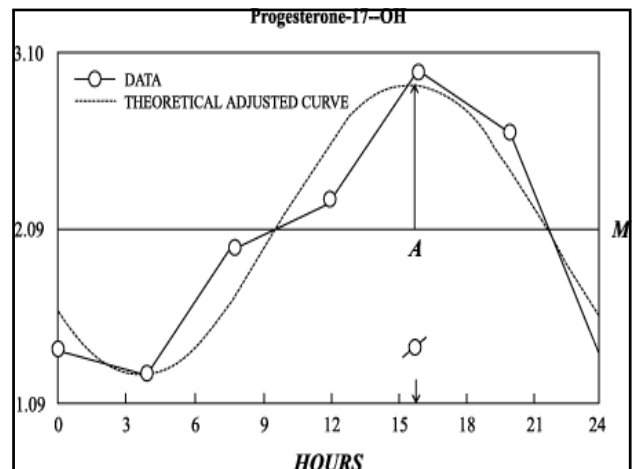
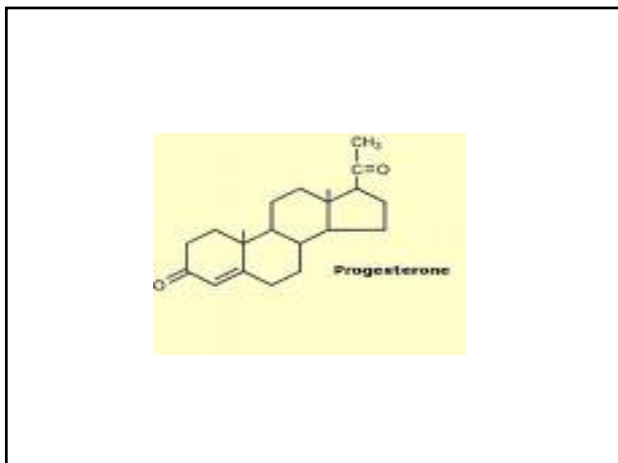
**TESTOSTERONE LIPOSOMAL GEL 100mg/g**  
 50-300mg in the morning



## PROGESTERONE DEFICIENCY IN MEN

### SYMPTOMS

- Tense & anxiety
- Superficial sleep
- Reduced urine flow
- Constipation



## PHYSICAL SIGNS

Excess body hair  
Male pattern baldness  
Gynecomastia  
Benign prostate hypertrophy  
Swollen abdomen



## COMPLEMENTARY EXAMINATION

### 1.- LAB TESTS

#### a) BLOOD

PROGESTERONE 1.2 ng/dl or 3.8 mmol/L  
OESTRADIOL 20-25 ng/dl or 75-90 mmol/L

#### b) URINE 24 HOURS

PREGNANDIOL 2mg

## TREATMENT

MICRONISED PROGESTERONE  
or PROGESTERONE gel-cream  
50-100mg at night

## MELATONIN DEFICIENCY

### SYMPTOMS

#### POOR SLEEP

Superficial  
Easily waking up during the night  
Difficulties to fall asleep and to fall back asleep  
Poor dreaming  
Tendency to go bed late and to awake up late  
Important jet lag symptoms

