

THE IMPACT OF THE METABOLIC CRISIS ON HORMONES

Maribelle Verdiales,
MD/ND



What is the Metabolic Crisis??

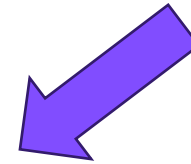
Metabolism: The sum of all the chemical processes that are necessary to live.

Metabolic Health: How efficient your metabolism works.

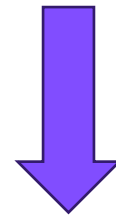
Metabolic Crisis: When metabolic health is lacking

Metabolic Distress → Disharmony towards Catabolism →

Accelerated Tissue Degeneration → Organ Disfunction



Dis-Ease



Decreased Quality of Life and Shortened Life Expectancy

Global Crisis

46.5% adults worldwide have insulin resistance

1 in 3 Americans are obese, which is associated with increased inflammation, glucose dysregulation and accelerating tissue degeneration (aging)

37% of Americans have metabolic syndrome, thus have at least 3 of the following: high blood sugar, insulin resistance, high cholesterol, low HDL, high triglycerides, and/or obesity.

**HOW CAN WE
ASSESS
METABOLIC
HEALTH:
*IS MY PATIENT IN
DANGER?***



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What are the Symptoms?

- Fatigue, lethargy
- Poor sleep
- Overweight/obesity
- Gut Issues
- Mood disorders
- Irregularities in the menstrual cycle (especially heavy periods)
- Worsening menopausal symptoms (hot flashes, night sweats)
- Low testosterone
- Low libido
- Increased inflammation

Markers of Metabolic Health

Clinical markers: Blood Pressure, Waist Circumference, Physical Exam and Patient's Symptoms.

Fasting Blood Glucose, HgA1c, Insulin Levels

Lipid Profile (Specially LDL, HDL, triglycerides)

Liver Enzymes

Aging Markers (FSH, AMH, CRP, Testosterone, DHEAS, Lipoprotein A, telomere length, muscle/bone/fat ratio, NT-proBNP (brain age))

Why is this Happening?



Poor Diet

Highly processed- nutrient deficient, unnecessary ingredients

High carbohydrates- push metabolic syndrome and does not promote satiety



Lack of physical activity

Sedentary jobs
Decreased of physical effort throughout the day



Poor Sleeping Habits

Poor sleep hygiene (electronics, blue light)
Lack of routine- disturbances of the circadian rhythm
Not enough hours- lowers leptin



High Stress

Constant fight-flight: Sympathetic override
High cortisol
Disturbances in the circadian rhythm
Increased risks of chronic diseases including Diabetes



Poor Diet

- Highly processed Diet = decreased nutrients, added unwanted ingredients (artificial sweeteners, coloring, pesticides, preservatives)
- High Carbohydrates- drives glucose dysregulation and insulin resistance.
- Increased inflammation/oxidation/ free radicals
- Not enough fat
- Not enough fasting

Lack of Physical Activity



Decreased Muscle and Bone mass- less energy expenditure

Increase inflammation

Increase Insulin levels

Increase estrogen levels

Decreased testosterone levels

Decreased Dopamine and Serotonin levels

Poor sleep quality

Sleep Deprivation

We need 7-9 hours

Affect Thyroid Function- reduced TSH

Decreased GH Production

Decreased leptin levels/ increased Ghrelin- increased hunger and decreased energy metabolism

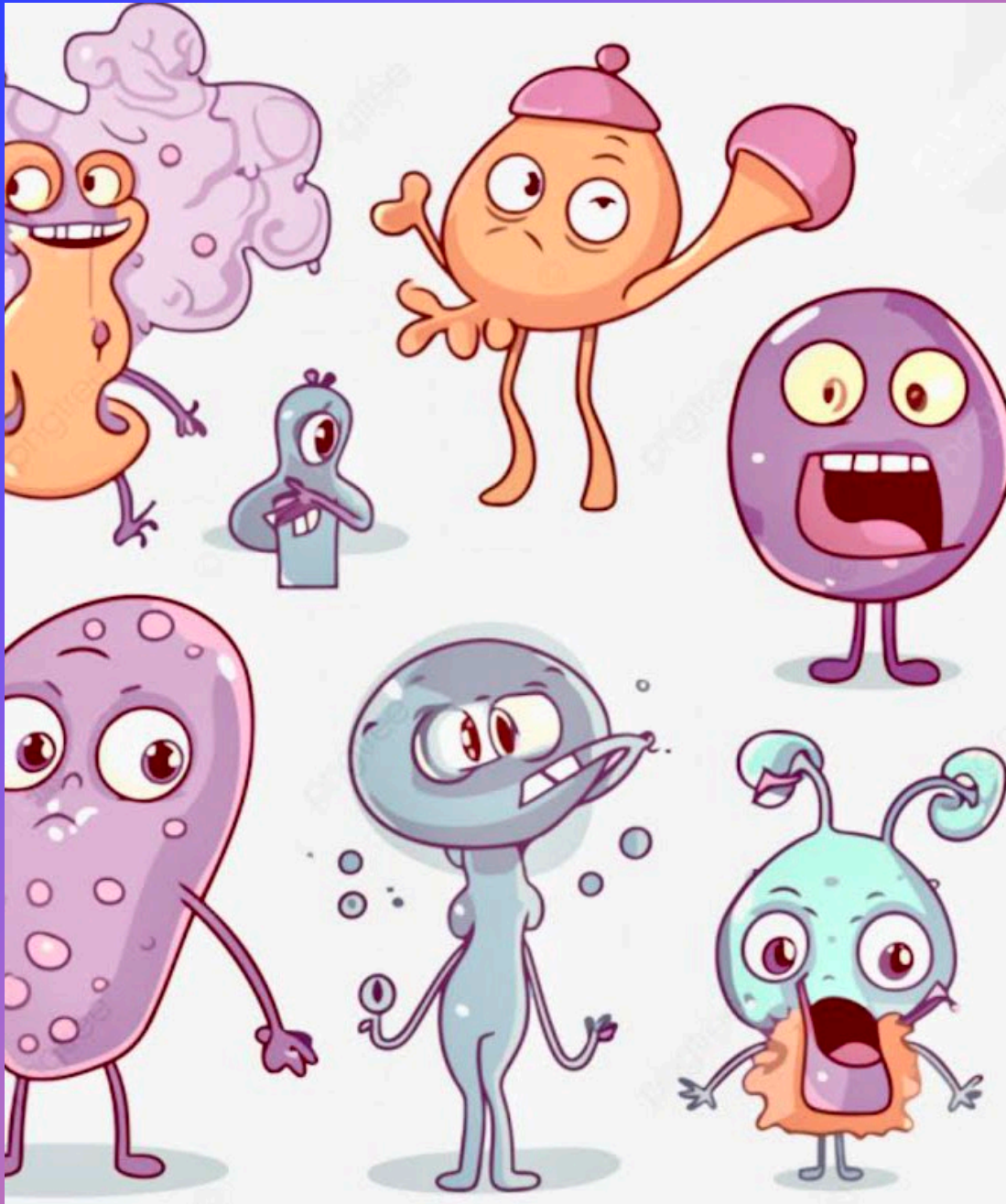
Decreased insulin sensitivity- higher risk of DM

Increased level (up to 60%) of estrogen

HIGH STRESS: FIGHT OR FLIGHT

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 - High Adrenaline (catecholamines)
 - Increased heart rate
 - Increased blood pressure
 - High Cortisol
 - Sympathetic Override
 - Sleep disturbances
 - Digestive issues (motility, digestion, flora)
 - Thyroid Downregulation
 - Decreased Growth Hormone

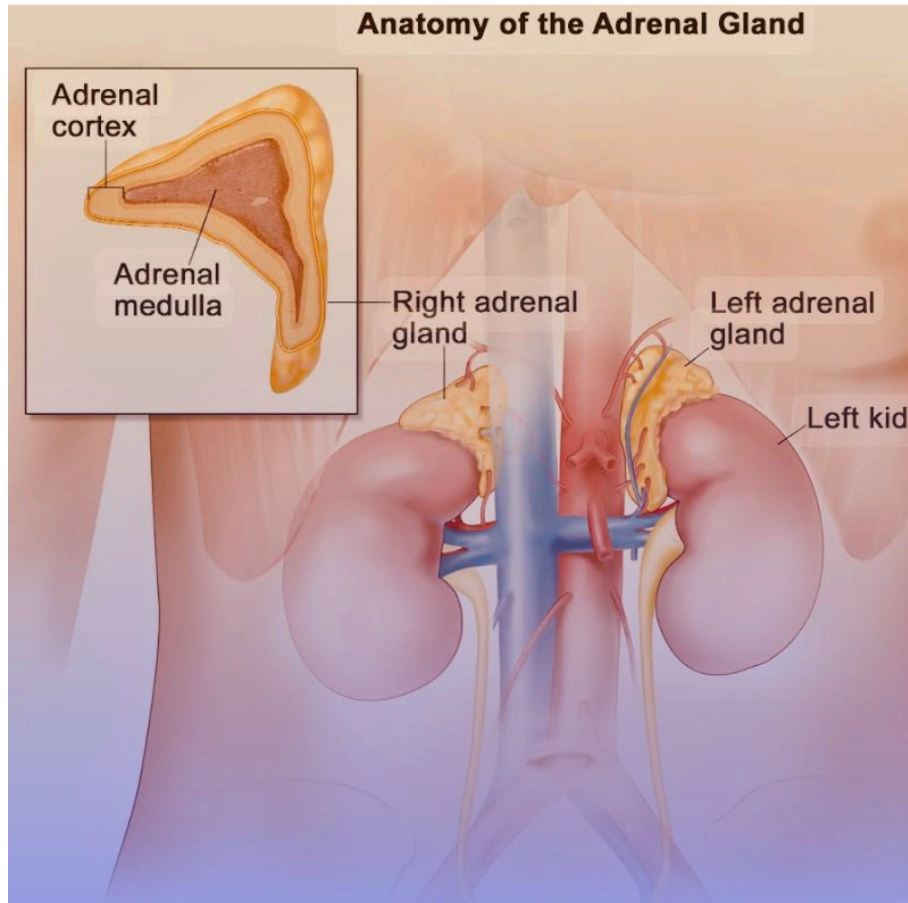




Some Key Players

- Adrenal Glands: Cortisol and Friends
- Insulin
- Thyroid Hormones
- End Organs: Testes, Ovaries

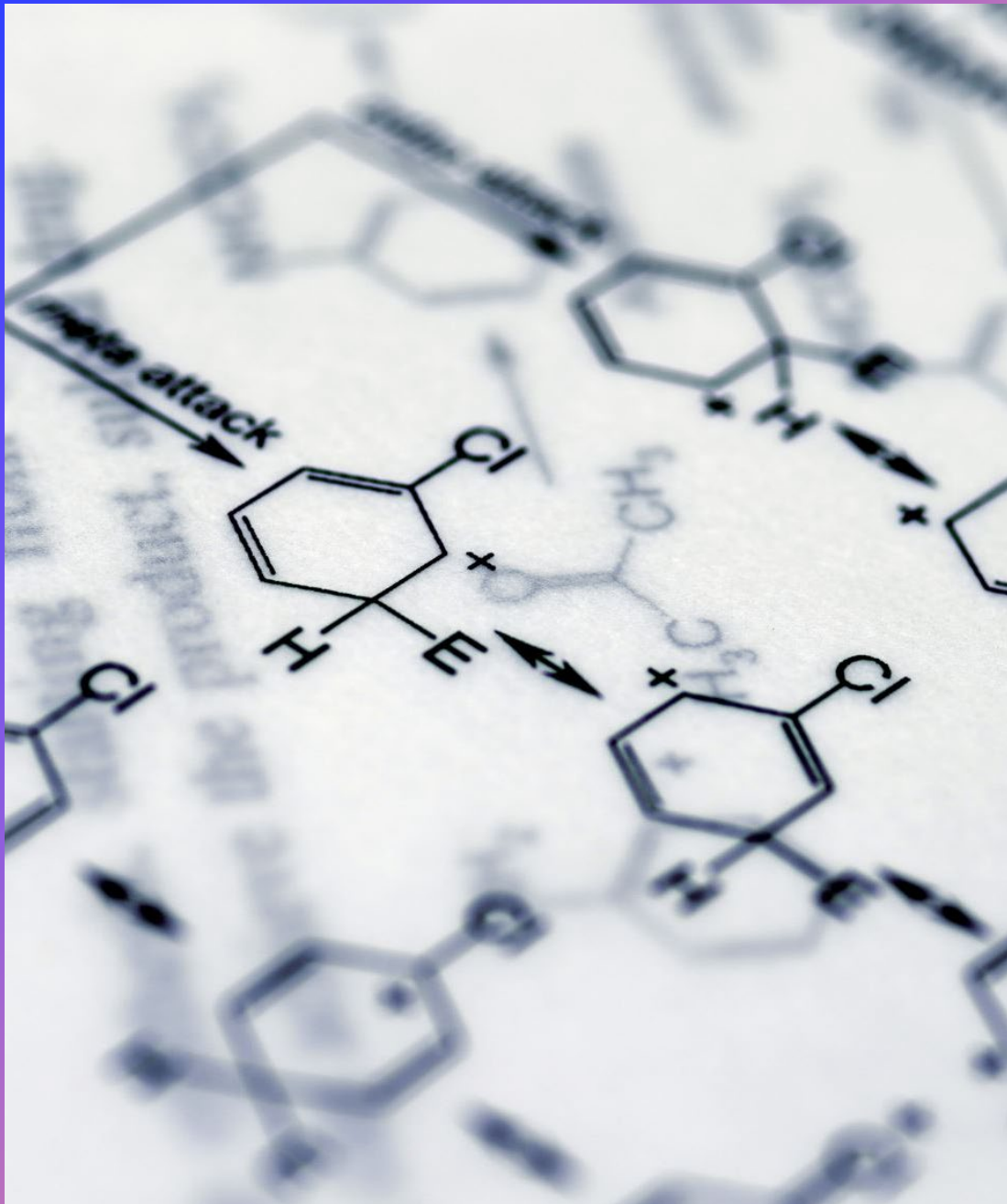
The Forgotten Glands: The Adrenals



- Cortex:
 - **Cortisol (Body's natural steroid)**- glucocorticoid. Involved in carbohydrate and protein metabolism. Crucial for stress response, immune system (stress response) and wound healing.
 - **Aldosterone**- mineralocorticoid. Regulate water and electrolyte balance through the kidneys (Sodium- Potassium balance)
 - **Dehydroepiandrosterone (DHEA)**- Adrenal derived androgen (Sex hormone precursor)
- Medulla:
 - **Catecholamines**. Epinephrine (Adrenaline) and Norepinephrine. Involved in stress response by increasing heart rate and blood pressure, increasing blood flow to muscles and brain.

Chronic Stress and Cortisol

- Involved in glucose metabolism. Promotes glycogen synthesis and increase levels in blood. **Quick Fuel for fight-or-flight**
- **Increase insulin levels**/increase sugar and fat cravings
- Chronic elevated levels of cortisol lead to weight gain-specially belly fat
- Chronic elevated levels weaken the immune system
- Chronic elevated levels cause muscle wasting, decrease metabolic rate
- Inhibit sex hormones
 - Decreased libido
 - Menstrual irregularities



INSULIN



Insulin is made by beta cells/pancreas.



Essential in glucose metabolism, levels of glucose in blood.



Promotes absorption of glucose from blood into liver, fat and skeletal muscle



Inhibits liver production of glucose



Insulin resistance- inflammation (elevated Tumor necrosis factor, NK activity, Interleukins, macrophage activity)



Inflammation- increase fat deposits.



Vicious cycle



Effects of thyroid hormone

Brain

Affects brain function and mood

Eye

Affects the function of the nerves and muscles

Lungs

Affects breathing rate

Heart

Affects heart rate and function

Liver

Regulates liver function

Digestive system

Affects the rate at which energy is used and digestion

Reproductive system

Affects functioning of the reproductive system

Musculoskeletal system and skin

Affects growth and development

The Thyroid: The Forever Alibi

- Pivotal organ in the regulation of metabolic rate, growth and development.
- Thyroid Hormones: T4 (thyroxine), T3 (Triiodothyronine)

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Estrogen and Testosterone

- Estrogen increases fat accumulation
- Testosterone increases muscle mass
- Metabolic compromise tends to lead towards estrogen dominance
- Chronic Metabolic distress will result in low testosterone, and eventually low estrogen
- Too little testosterone will cause muscle wasting (men and women).
- Too little estrogen. (Women): Decreased bone mass, decreased collagen, decreased elastin, sex organs deterioration

Let's Be Part of The Solution



First: The
basics,
Lifestyle...

Adjuvant aids:

- **Sleeping:** Sleep Time/ Mag Complete
- **Diet:** Nutraglutide/ Glucolyze/ Women's Complete/Men's Complete/Omega-3
- **Physical Activity:** Power Fuel
- **Stress Management:** Calm Day/ Adrenamax
- **Hormonal Support:** Thyro complete, Virility, Fertility and our NEW UTR



Sleep Time

- Gamma aminobutyric acid (GABA)-naturally occurring amino acid that works as a neurotransmitter and has a calming effect.
- Suntheanine (L-Theanine)- Patented. Stimulates alpha waves- alert but relaxed.
- 5- Hydrotryptophan (5- HTP)- Serotonin precursor. Happy hormone. May improve insomnia, depression, anxiety, decrease appetite and pain syndromes.
- Melatonin- The sleep Hormone. Also involved in tissue regeneration and it is a potent antioxidant.



Mag Complete

Highly Absorbable

Magnesium- Has a calming effect on Brain

Muscle relaxant

Crucial for Muscle and Bone health

TRAACS- Amino Acid Chelate System

Potassium, Calcium, Sodium- essential minerals, balance Magnesium



Nutraglutide

- **Insulin Resistance/Glucose Management:**
 - Cinnamon-improve insulin receptors sensitivity, Gut support
 - Chromium-improve glucose metabolism
 - Berberine- Improves Insulin resistance, helps with lipid profile, reduce BMI
- **Cortisol Control and Stress Management:**
 - Ashwaganda
 - L-Theanine (Suntheanine)- Dopamine (satisfaction Hormone)/Gaba precursor
- **Weight Management:**
 - Capsimax-reduce appetite, stimulate metabolism
 - Sirtmax (Kaempferia Parviflora- Thai Black Ginger)- weight loss, improve fat metabolism



GlucoLyze

- Vitamin B6, Vitamin B12, Biotin
- **Chromium**-Glucose Tolerance Factor
- **Cassia (Cinnamon)**-increase insulin sensitivity
- **Gymnema**-Improve pancreatic function
- **Alpha Lipoic Acid**-inhibit glycation
- **L-Taurine**-mobilize fat, decrease sugar cravings, assist release of insulin
- **Green Tea** -counteract inflammatory actions of insulin
- **Vanadium**-reduce hyperglycemia, improve liver and muscle insulin sensitivity

General Nutritional Support



- Plug in the “Holes” in the Diet
- Antioxidants
- Anti-inflammatory
- Brain Health, Cardiovascular Health, Endocrine Health



Power Fuel

- Coq10- Mitochondrial Support
- L-Carnitine- Mitochondrial support. Increase energy
- DMG- Metabolic Enhancer. Immune support
- Rhodiola- Adaptogen. Enhance endurance and exercise capacity
- Bromelain- Enzyme. Reduce inflammation/inhibit prostaglandins
- Protease- Enzyme. Decrease muscle soreness
- Malic acid-Intermediate Krebs Cycle. Increase ATP production
- Electrolytes
- L-Taurine-Amino Acid. Enhance Muscle function
- L-Arginine-Precursor of Nitric Oxide. Improve Oxygenation. Vasodilation.



Adrenamax

- **Cordyceps**- Medicinal mushroom. Energy tonic, immune support.
- **Panax Ginseng**- Immune support, systemic support. Energy tonic.
- **Eleutherococcus Root**- Stimulating. Improve mood and stress tolerance.
- **Ashwaganda**-relaxing adaptogen. Decrease cortisol.
- **Rhodiola**- Adaptogenic tonic. Improve performance.
- **Licorice Root**-Reduce inflammation. Decrease cortisol.



Thyro Complete

- **Iodine**-essential. Part of Thyroid hormone
- **Zinc**- T4 to T3. Help receptors
- **Selenium**-Enzyme support. T4 to T3
- **Copper**-balance zinc
- **L-Tyrosine**-building block for thyroid hormone
- **Ashwaganda**-relaxing tonic. Support adrenal. Indirect thyroid support
- **Coleus Forskohlii**- AMP production. Metabolism support
- Thyroid (bovine)-direct support
- **Hypothalamus** (bovine)-direct support
- **Pituitary** (bovine)-direct support



Fertility

- **Vitamin D**-Ovarian function. Progesterone production
- **Myo-inositol**- Improves insulin sensitivity. Decrease effect of insulin in ovaries.
- **Coq10**- Mitochondrial Support
- **N-Acetyl L-Cysteine**- Liver support, promote Glutathione
- **Ovary**- Direct support
- **Resveratrol**-Cardiovascular health. Antiaging



Virility

- **L-Arginine-** Blood Flow. Cardiovascular health.
- **Maca-** Increase testosterone
- **Tribulus-** Increase testosterone, increase DHEA
- **Panax Ginseng-** Increase blood flow, energy/performance enhancer. Vascular Health.
- **Epimedium (Horny Goat)-** NO, Relaxes smooth muscle and improve blood flow. Inhibit PDE- 5 enzyme (Viagra effect)
- **Diindolylmethane (DIM)-** Decrease estrogen
- **Ginkgo Biloba-** Improved blood flow
- **Testes (bovine)-** Direct support

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- **New Kid on the Block**
- Female Optimization
- Placental Glandular (New Zealand)
- Chaste Tree- Hormone balancing, improved ovulation
- Boswellia- Reduce inflammation, decrease heavy menses, hormone balancing (FSH, LH, testosterone-Estrogen ratio)
- Curcumin- Reduce Inflammation, estrogen balancing, reduce PMS and menopausal symptoms
- Help with:
 - Recurrent Pregnancy loss
 - Pelvic Pain
 - Sexual Dysfunction
 - Heavy Menses
 - Scant Menses
 - Irregular Cycles
 - PMS
 - Inflammation





QUESTIONS???

**THANK
YOU!!**

