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(No Financial Relationships to Disclose)

Physiology Optimization is the Key in the Management of Age Related Body Breakdown

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to present and discuss the general principle of physiology optimization

WHAT IS PHYSIOLOGY?

Physiology is the science of the function of living organisms and their parts

WHAT IS HEALTH?

Health is optimal physiology

Bringing Physiology Back to Medicine, because Conventional Medicine is Oriented on Drugs

Do you know that:

- ✓ while the United States makes up only 5% of the world's population, we consume over 50% of all the world's pharmaceutical drugs?
- v prescription drugs are now killing far more people than illegal drugs?
- ✓ Americans consume 80% of the global supply of pain pills?
- more than 25% of all children in US take prescription drugs on a regular base? American kids consume more than 85% of all psychotic drugs?
- the percentage of women taking antidepressants in America is
 the highest in the world?

600,000 hysterectomies done annually in US

In Africa every morning a gazelle awakens knowing that it must outrun the fastest lion if it wants to stay alive. Every morning a lion wakes up knowing that it must run faster than the slowest gazelle or it will starve to death. It makes no difference whether you are a lion or a gazelle: when the sun comes up you had better be running.

What can we expect during aging and why?

Same Size & Shape



We All Started Out the Same...









Hormones Kick In !



OPTIMAL HEALTH!

Unlimited Energy

Unlimited Power





Another changes occur around age 40 and visibly alter a person physically

Once, you look down on yourself from the top, and cannot see your feet. In front of your eyes, only he, your STOMACH, is present. With all the problems in life, here is one more. Now, it is cramped behind the wheel, and sex turns into a sumo battle,

Our hair begins to gray

Our skin begins to wrinkle



As we age...

We begin to experience a decrease in our quality of life:

- fatigue
- loss of memory and mental clarity
- loss of strength and energy



Time is not your friend. Every day past 40 you get slower, weaker, sicker, less attractive to potential mates and less full of life & vitality.

Age 50 - Life cycle completed!





OFF We look like kids again - the same

Aging

- high cholesterol
- myocardial infarction
- type II diabetes
- hypertension
- congestive heart failure
- fatigue
- insomnia
- depression, anxiety
- fibromyalgia
- migraine
- cataract
- macular degeneration

- bone loss
- skin changes
- Ioss of muscle mass
- weight gain
- 🔸 arthritis
- memory loss
- poor immunity
- menopause
- andropause, ED
- cancer
- Alzheimer's disease
- Parkinson disease

Menopause

- hot flashes
- loss of libido and sexual drive
- facial and body hair
- scalp hair loss
- bone loss, arthritis
- bloating

- weight gain
- mood swings
- depression
- increased risk of cancer
- fatigue
- incontinence



Andropause

- erectile dysfunction
- Ioss of sexual desire
- abdominal obesity
- urinary problems
- loss of hair on the face, axilla, pubis
- scalp hair loss

- bone loss
- Ioss of muscle mass
- weight gain
- depression, irritability
- increased risk of cancer
- fatigue
- anhedonia

anhedonia is an inability to experience pleasure from normally pleasurable life events such as eating, exercise, social interaction or sexual activities



What we're looking for ...

What's looking for us.





From one extreme....



....to another....



....and another....





How aging affects your body stature

Age: 45





How aging affects your body appearance...



How aging affects your sex life...



How aging affects your daily life...



How aging affects your daily schedule...


"Definition" of aging...





The Cat In The Hat On Aging

I cannot see I cannot pee I cannot chew I cannot screw Oh, my God, what can I do? My memory shrinks My hearing stinks No sense of smell I look like hell My mood is bad -- can you tell? My body's drooping Have trouble pooping The Golden Years have come at last The Golden Years can kiss my ass

What can we do?







What Causes Disease?

Disease can be caused by one of four factors:

Genetics/Congenital:

Conditions such as cystic fibrosis, hemophilia, Down's syndrome, congenital heart disease, and sickle cell anemia have clear genetic or congenital causes.

Infections:

Diseases clearly caused by an infectious organisms, which include viruses, bacteria, fungi, and protozoa.



Trauma:

Any physical trauma can cause brain hemorrhage, post-traumatic epilepsy, brain injuries, etc.



Acquired physiologic errors:

The majority of people who have disease have one or more that has been caused by acquired physiologic errors, or imbalances.

Conditions such as heart disease, cancer, arthritis, depression, fibromyalgia, migraine, fatigue, ulcerative colitis, atherosclerosis, and many others fall into this category.

Aquired Errors of Physiology

This is the category of disease addressed by the restorative medicine approach.



Errors of Physiology are the Root Cause of Disease



The Main Principle:

ONE CAUSE...

and

ONE SOLUTION!

or

One Disease, One Treatment Approach

How do you fix these errors in physiology?





WE CANNOT STOP THE AGING PROCESS...



BUT WE CAN SLOW IT DOWN!



WHY?



After the age of 35 – we acquire deficiencies and imbalances in our physiology



These deficiencies and imbalances of physiology can be reversed safely, medically and scientifically.



Method of Restorative Medicine

- restorative medicine treats the errors of physiology by restoring the body's hormones and nutrients to optimal levels
- this restorative medicine approach is effective for the diseases and conditions caused by physiologic errors because they are all basically the same disease

So how can heart disease be the same as migraine or arthritis or depression or Alzheimer's disease ?

We propose that they are all fundamentally the same because they are caused by the same problem: a physiologic and hormone imbalance including deficiencies of important vitamins and minerals.

"ASTONISHING ... REVOLUTIONARY"

Breakthrough Medical Discovery REVEALS...



Aging, Disease and Illnesses Are Linked to ONE CAUSE and ONE SOLUTION!

> Menopause Migraine High Cholesterol Erectile Dysfunction

Macular Degeneration

Fatigue and MORE

THE ugar Principle

Sergey A. Dzugan, MD, PhD George W. Rozakis, MD with Deborah Mitchell

"UNLOCK YOUR BODY'S NATURAL HEALING ABILITY"

Dr. Sergey A. Dzugan

The Principle of Physiology Optimization

Many conditions are actually quite similar because they have similar causes.

Deficiencies and **Imbalances**

"Nature alone can cure: this is the highest law of practical Medicine, and the one to which we must adhere... Nature creates and maintains; she must therefore be able to cure."

Dietl (1845)

You can eat right, exercise, stand on your head, drink carrot juice, and take your supplements, or have stem cell therapy but none of that will increase longevity as long as your hormones are telling your brain that you're over the hill. It's as if your body is saying "Why bother?" Until you change that message, all your other efforts will be in vain.

Hormonal physiology

- we are born with hormones
- our hormone levels elevate at puberty
- the level of hormones is stable between age 20-30
- hormones gradually decline after age 35
- hormonal decline leads to loss of normal physiology control or body surveillance

Hormonal physiology (cont.)

- loss of surveillance control leads to symptoms and disease
- Ioss of surveillance is hormonally driven
- Joss of surveillance can be hormonally corrected
- hormonorestoration is a key to successful systemic therapy of diseases of aging treated with traditional therapy

The flame is not the beginning - it is the end of destructive process



Safety of hormones

- the media has created fear in the minds of patients
 regarding hormones. That is very unfortunate because
 we cannot live without hormones.
- our body requires hormones to work properly.
 Without thyroid hormones or insulin you will die fast.
- if we take away your estrogen, progesterone,
 testosterone or other steroid hormones you will die
 also, but... a slow painful death

Safety of hormones (cont.)

- hormonorestorative therapy is designed to restore your hormonal levels to the optimum
- nothing negative is yet to be published on the bioidentical hormones that we use

Hormonorestorative therapy

In 1996 we employed the term hormonorestorative therapy (HT) into our practice for the regimen that was used for our patients.

Hormonorestorative therapy is the multihormonal therapy with the use of a chemically identical formula to human hormones and is administered in physiologic ratios and dosages that simulate the natural human production cycle and allows to restore the optimal level of hormones.

The goal of hormonorestorative therapy:

to restore vital forces that control the optimal physiology to treat the patient, not the illnesses that have befallen them

- most diseases represent a manifestation of a long established derangement of vital forces
- the derangement of the vital force had happened due to a deficit of the surveillance control system resulting in an abnormality of hormonal metabolism
- the vital force is hormonal health and physiological balance

Ranges for DHEA and testosterone





Bio-identical Hormone Restoration

If a hormone is low, restore optimal levels!

- type 1 Diabetes: bioidentical insulin
- hypothyroidism: bioidentical T4 and T3 (Armour Thyroid)
- growth hormone deficiency: bioidentical GH
- adrenal insufficiency: cortisol (hydrocortisone)

Bio-identical Hormone Restoration (cont.)

- proper fit in receptors
- normal elimination
- > monitor therapy with blood tests!

No side effects, but effects!

But... menopause, andropause, autoimmune disease, etc Non-bioidentical: methyltestosterone, Premarin, Provera, etc?!!!!

Few rules for HT:

- bio-identical structure of hormones
- individually modified doses
- cyclical manner
- Iarger dose in the morning
- treatment control by serum hormonal level
- mono- or bi-hormonal therapy is usually inadequate
- multi-hormonal therapy is optimal
Bio-identical Hormone Restoration (cont.)



bio-identical restoration must be used instead of nonbio-identical substitution in all cases

Potential Problems with Bio-identical Hormones

- excessive dose
- lack of balance with other hormones
- nonphysiological delivery: formulations, route, cycle, and timing

We Must Remember Bioidentical Hormones are NOT SYNTHETIC DRUGS!

Natural Hormone







The Progesterone in YOUR BODY

A Drug used to replace Progesterone in your body



Thirsty?





Water?

ABSOLUT Country of Sweden

This superb vodka was distilled from grain grown in the rich fields of southern Sweden Plass been produced at the famous old distilleries near Show in accordance with more than fOcyears of Swedish tradition Joka has been sold under the new Susolut since 1879.

> 40% ALC./ VOL (80 PROOF) 1 LITER IMPORTED PSEDUCED AND INCOMPLETE IN APAGE SWEDT IN IT ASSOLDT CONVENTION A UNISIDAL OF YES MINISTRATIAN



It's close enough...

Water? Vodka?



Basic Hormonorestorative therapy

HT includes a combination of several bio-identical hormones:

- pregnenolone
- dehydroepiandrosterone
 (DHEA)
- triestrogen (women)
- progesterone
- testosterone

- compounded/Armour thyroid
- melatonin
- hydrocortisone
- aldosterone

Delivery systems for hormones:

Oral

- 1. Capsules 2. Tablets
- > pregnenolone
- > DHEA
- > melatonin
- > aldosterone

- > hydrocortisone
- > whole thyroid (Armour thyroid)

3. Troche

> progesterone (200 mg/troche)

4. Drops

> Tri-Est -5 mg/ml (E3:E2:E1-80:10:10) > progesterone - 50 mg/ml > testosterone - 50 mg/ml

Topical Gels (micronized)

- > Tri-Est gel (E3:E2:E1 90:7:3) -1.25-2.5 mg/ml
- > progesterone 5-10% − 50-100 mg/ml

testosterone 5-10% - 50-100 mg/ml

Parenteral Subcutaneus

- > HGH (human growth hormone)
- > HCG (human chorionic gonadotropin)



the recommended doses were determined by clinical data, serum hormonal levels, and the so-called the optimal range that was defined as a level of hormones in one third of the highest normal range for all steroid hormones for healthy individuals between the age of 20 and 30.

Basic Lab – Serum: Additional Lab: (if needed)

- → CBC
- chemistry panel
- Iipid profile
- homocysteine
- pregnenolone
- DHEA Sulfate
- total testosterone
- total estrogen
- progesterone
- cortisol
- vitamin D-3
- TSH, T3, T4
- serotonin
- prolactin

- aldosterone
- melatonin
- dopamine
- free testosterone
- → DHT
- SHBG
- → IGF-1
- → **PSA** (*men*)

Balancing Your Physiology

Conventional Medicine *VS.* **Physiologic Medicine**





















Restorative Medicine The Tree Analogy



Aging Process



Singular Modality Targets Symptoms

 Erectile Dysfunction

 Menopause
 Depression

 Cholesterol
 Migraines

Singular Modality

Singular Drug

Singular Symptom

Premarin	Menopause
Viagra	Erectile Dysfunction
Lipitor	Cholesterol
Paxil	Depression
Topamax	Migraine

Restorative Medicine Targets Cause

Melatonin Testosterone DHEA Estrogens Progesterone Pregnenolone Thyroid Hormone Vitamin D3

Restorative Medicine

Multi-modal Approach

Pregnenolone DHEA Testosterone Estrogens Progesterone Thyroid Hormone Melatonin Vitamin D3 & others

Many Symptoms

Menopause Erectile Dysfunction Cholesterol Depression Migraines

Restorative Medicine A Healthy Tree





Conventional Medicine vs Physiologic Medicine

Conventional Medicine Single modal

Physiologic Medicine Multimodal Crestor | Zoloft | Fosamax | Viagra | Ambien | Imitrex | Cyclosporin | Atenolol |

Pregnenolone | DHEA | Testosterone | Estrogens | Progesterone | Thyroid | Melatonin | Vitamin D3 | Magnesium | Zinc | Vitamin E | Saw Palmetto | and others...

Many

Question What are you deficient in?

Single Modal vs Multimodal Method





It's as simple as 4 flat tires





If you have 4 flat tires and you only fix one or two or three you still can't get back on the highway of life until you fill all 4! **That is multimodal physiologic medicine.**



Four Flat Tires



Estrogens



Testosterone



DHEA



Progesterone



You can't drive with one full...



Estrogens



Testosterone



DHEA



Progesterone



You can't drive with two full...



Estrogens



Testosterone



DHEA



Progesterone
Maybe with three...



Estrogens



DHEA



Testosterone



Progesterone



But all four is the best!



Estrogens



DHEA



Testosterone



Progesterone

Balanced Physiology!

The team-work of our glands



Agents that help HT works more efficiently

Agents that influence testosterone metabolism

- saw Palmetto: 5-alpha reductase inhibitor
- zinc: aromatase inhibitor
- * progesterone: a powerful 5-alpha reductase inhibitor, aromatase inhibitor

Agents that directly effect cholesterol metabolism

- vitamin D3
- * thyroxine (T4)

- * omega-3/phospholipid complex
- * HGH
- * lypase (effect on TRG)

Agents that indirectly effect cholesterol metabolism

- protein (increases production of glucagon which block the conversion of HMG CoA to cholesterol)
- B-complex
- HGH
- Armour thyroid
- * melatonin





Balance and Optimization



The Power of Testosterone



Estrogen and progesterone levels (during a 28-days menstrual cycle)



Estrogens



Estrogen/progesterone ratio during aging



A = balance of estrogen and progesterone during the secretory phase of a normal menstrual cycle
 B = relative production of estrogen and progesterone during an anovulatory premenopausal menstrual cycle

*** C** = relative production of estrogen and progesterone after menopause

Estrogen excretion (in mg/day) during various ages²¹⁹

	Wom Age 18	en 3-41	D	Men		
EstrogensProliferativeSetphaseph		Secretory phase	Postmeno- pausal Women	Age 20-48	Age 45-65	
Estriol	7	16	3	3	6	
Estrone	5	7	2	4	6	
Estradiol	2	4	1	1	2	

Circadian Rhythm of Progesterone

Basic statistics for salivary progesterone in healthy children and adolescents in the morning, at noon, and in the evening.

			Age group		
		<4 weeks	1–12 months	1–2 years	2–15 years
		(n 13)	(n 17)	(n 10) (r	n 212)
Progesterone, Mornii	ng Mean (SD)	677 (305)) 235 (138)	115 (41)	137 (81)
pmol/L	Range	350-1320	0 89–525	60–169	29–601
Noon	Mean (SD)	423 (240)) 102 (38)	63 (21)	101 (53)
	Range	153-875	51–162	25–99	16-282
Evenin	g Mean (SD) 381 (191) 122 (67)	52 (24)	77 (46)
	Range	80-716	35–239	25-86	11–267

Groschl M, Rauh M, Dorr H-G. Circadian Rhythm of Salivary Cortisol, 17-Hydroxyprogesterone, and Progesterone In Healthy Children. Clinical Chemistry 2003 49;10:1688-91

High Cholesterol

A NEW PARADIGM IN THINKING, UNDERSTANDING, AND TREATMENT



Sergey A. Dzugan, MD, PhD Konstantine S. Dzugan

CHOLESTEROL - THE MOST IMPORTANT "HORMONE" OF ALL!

New hypothesis of hypercholesterolemia: (hormonodeficit hypothesis of Hypercholesterolemia)¹

- this hypothesis implies that hypercholesterolemia is the reactive consequence of enzyme-dependent down regulation of steroid hormone biosynthesis and their interconversions
- in short, hypercholesterolemia is the compensatory mechanism for declined production of steroidal hormones

Note!

We believe that:

• a high cholesterol level is a consequence of a low production of steroid hormones

• a low cholesterol level is a cause of a low steroid hormones production

Case study

Patient E. 57 yr, male

Diagnosis: hypercholesterolemia, impotence, depression, insomnia.

<u>Complaints</u>: severe ED (since age 39), hypercholesterolemia, fatigue, depression,

insomnia, short-term memory problems.

	ТС	TRG	HDL	LDL	VLDI	TC/HD		
08/31/00	330	216	54	233	43	6.1		
09/09/03	187	138	40	119	28	4.7		
	Ι	DHEAS	Preg	n Es	tradiol	Progest	t Test	Cortisol
(nl - age 20-	-29)	(280-640)	(10-2	.00) ((0-53)	(0.3-1.2)	(280-830)	(4.3-22.4)
08/31/00		93	24		56	0.3	186	0.9
09/09/03		540	159		30	1.3	496	15.6

follow up 09/09/03 – no complaints

Migraine is one of the most mysterious diseases. "Headache from hell"





 No lifestyle changes! The Migraine Cure is not dependent on exercise, environment or climatic changes to guarantee success.
 No more guesswork, futility and frustration! The Migraine Cure

• No more guesswork, futility and frustration! The Migraine Cure identifies and delivers exactly what YOU PERSONALLY need in order to be permanently migraine-free and this is a guarantee.

How to Forever Banish The Curse of Migraines— Using a 100% Effective, 100% Safe, Clinically-Proven, Yet Drug-Free, Medical Breakthrough

Sergey Dzugan, MD, PhD With Deborah Mitchell



New Hypothesis of Migraine:²

this hypothesis implies that migraine is a consequence of a loss of neurohormonal and metabolic integrity



Multimodal treatment program:

- hormonorestorative therapy
- simultaneous correction of the imbalance between
 sympathetic and parasympathetic nervous systems and
 the ratio of calcium to magnesium
- "resetting" the pineal gland
- improvement of intestinal absorption through restoration of normal intestinal flora
- cleanse from parasites infestation

It is necessary to stress the fact that the above mentioned parts of the program cannot be separated.

Case study

Patient CH. 58 y.o., female, <u>first presentation 01/07/05</u>

Diagnosis: hypercholesterolemia, <u>migraine</u> (38 years history), CFS, depression, insomnia.

<u>Complaints</u>: daily migraine, hypercholesterolemia, CFS, depression, body aches, insomnia, constipation, hot flashes, vaginal dryness, no libido, poor sex drive, short-term memory problems, overweight.

	TC	DHEAS	Pregn	Estradiol	Progest	Test
(nl - age 20-29)	(<200)	(65-380)	(10-230)	(19-528)	(0.2-28)	(14-76)
01/07/05	300	86	<10	19	0.4	- 51
09/12/05	195	340	190	217	5.9	61

<u>follow up 09/12/05</u> – no complaints <u>follow up 12/12/07</u> – no complaints

Case of Migraine



Non-Small Cell Lung Cancer (NSCLC)



Our Hypotheses

- the documented life cycle NSCLC inflection with increased age is caused by a loss of immune surveillance
- loss of surveillance is driven by hormone decline
- loss of surveillance can be hormonally corrected
- hormonorestorative therapy is a key to successful systemic therapy of NSCLC treated with radiation therapy

Anti-Aging Strategy (immunorestorative therapy – IRT)

- hormonorestorative therapy
- antioxidant therapy
- correction of protein malnutrition
- miscellaneous



Case study: 80 y.o. male with bilateral NSCLC; Survival 5 yrs (no chemo)



Hypothesis for pathophysiology links cancer and atherosclerosis

Age-related down regulation of steroid hormones

Defective recognition of mutant cells by macrophages and dendritic cells

Uncontrolled mutant cell proliferation with progression to clinical cancer Compensatory hypercholesterolemia

Atherosclerotic disease with progression to heart disease and stroke

July 2009: patient received 130 laser pulses to the right eye.



May 2010: She received 54 pulses of laser by a highly skilled retinologist. OCT Pre Laser Below.



August 2010: Patient told she may need Avastin or Focal Laser. Obviously no improvement from May laser.



September 2010:

Physiology optimized with Restorative Medicine.

January 2011: Dramatic change in thicknesses. Patient told: Good News. No need for anything. See you in 6 months.



Case study





Before Program: Patient C. 61 yr, male; congestive heart failure, high cholesterol, hypertension, diabetes Type II, Chronic Lymphocytic Leukemia (WBC>60000), erectile dysfunction, obesity (280 lb), high PSA (18), depression, fatigue, insomnia, short-term memory problems.
Told "TWO YEARS TO LIVE" by cardiologists. 18 drugs.

	Cholesterol	DHEA	Pregnenolone	Estrogen	Progesterone	Testosterone
"Normal"	< 200	280-640	10-200	0-53	0.3-1.2	280-830
Before:	310	40	10	56	0.2	166
At 3 Year:	190	543	162	28	1.1	600



2010

After Program: dramatic improvement, weight - 184 lb, PSA – 7, WBC 17000, no drugs.

April 2012

Case of multiple concurrent illnesses


Case study



Patient CH. 29 y.o., male, <u>first presentation 08/12/09</u> <u>Diagnosis</u>: Anxiety, Arthritis, Fatigue, Obesity. Weight -283 lb. Height 5'10"

	TC	DHEAS	Pregn	Estr	Progest	Test	Cortisol
(nl - age 20-29)	(<200)	(280-640)	(10-230)	(<130)	(<1.4)	(241-827)	(4.0-22.0)
08/12/09	199	352	86	160	1.5	178	11.0
04/29/11	200	436	100	<50	2.2	718	18.0

2009



2015

follow up 1/10/15 – no

complaints;

Weight 189 lb



2009 - 283 lbs.

2010 - 268 lbs

2004 - 280 lbs

2014



192 lbs 189 lbs 173 lbs

Case of Autoimmune

Disease

Each person requires an individualized program!



Impossible claims?



Not a Magic Aesthetic Miracle



Nor Will It Turn You Into a Terminator







To this



Enjoy life as you did!

18 years ago

18 years later

...after physiology optimization



It is interesting that when we have good results with different diseases, we have to deal with conventional doctors who claim that these results can be explained via "misdiagnosis, placebo effects, and anecdotal evidence".

The Philosophy of Science

Extraordinary survivors, like others anomalies in science, must be carefully studied since explanations for anomalies have always served as the basis for scientific advance.

Conclusion

- the main principle of physiology optimization is
 "One cause... and one solution or one disease, one treatment approach"
- this principle can be applied for the majority of diseases because they share the same pathophysiological mechanism and have the same root cause of disease – acquired errors of physiology
- physiology optimization is the key in the management of age related body breakdown

Thanks





- 1. Dzugan SA, Smith RA. Hypercholesterolemia treatment: a new hypothesis or just an accident. Med Hypotheses. 2002;59:751-6.
- 2. Dzugan SA, Smith RA. The simultaneous restoration of neurohormonal and metabolic integrity as a very promising method of migraine management. Bull Urg Rec Med. 2003;4:622-8.

