



اهمیت رژیم درمانی و ارزیابی تغذیه در بیماران نابارور

دکتر لادن گیاهی

متخصص تغذیه و رژیم درمانی

عضو هیات علمی مرکز درمان ناباروری ابن سینا

شواهد علمی ارائه شده

اثرات بین نسلی تغذیه

Trans-generational Effect of Nutritional Signals on Reproduction Status

Ladan Giah

Avicenna Research Institute & Infertility treatment Center

September 2016

Tehran



پنجره طلایی فرصت برای
مهندسی سلامت نسل آینده

Prenatal and postnatal environmental causes of obesity



Ladan Giah (PhD)
Dietitian & Immunonutritionist
Avicenna Research Institute



The 6th Congress of Obesity Prevention and Treatment
&
The 3rd International Congress on Obesity Surgery

شواهد علمی ارائه شده

Nutrition in Infertility: Fertile Field of Research & Intervention

Dr. Ladan Giahi
Avicenna Infertility Clinic
Fall 2012

Epigenetic causes of Polycystic ovarian Syndrome: Can we minimize the risk?



Ladan Giahi (PhD)
Dietitian & Immunonutritionist
Avicenna Research Institute



DIET IN ENDOMETRIOSIS: NOVEL FINDINGS AND FURTHER OBJECTIVES

Dr. Ladan Giahi
Avicenna Research Institute
Department of Reproductive Immunology
Second National Endometriosis Congress
January 2013
Tehran

Nutrition Counseling in Male Infertility: Dietary Intake or Single Nutraceutical

LadanGiahi (BSc, MSc, PhD)



Supplements, Anabolic Steroids & Endocrine disruptive chemical in fertility



Ladan Giahi (PhD)
Dietitian & Immunonutritionist
Avicenna Research Institute

IRCIRAN Congress
4th International Congress on Reproduction
25th - 27th April 2016

Gender Selection By Diet: Fact or Fiction



Ladan Giahi (PhD)
Dietitian & Immunonutritionist
Avicenna Research Institute



ارزیابی باورها

شواهد علمی ارائه شده



RELEVANCE OF VITAMIN D IN REPRODUCTION & PREGNANCY

Ladan Giahi (PhD. Immunonutrition)
Avicenna Infertility Treatment Center

November 2013

IMPACT OF NUTRITION ON OPTIMUM FERTILITY STATUS & ART SUCCESS

Ladan Giahi

Avicenna Research Institute & Infertility treatment Center
Tehran

ISERB 2017 ICRHC
1396

Short - and Long-Term Effects of Gestational Diabetes Mellitus on the Newborn

Ladan Giahi (PhD, Immunonutrition)



Avicenna Research Institute &
Infertility Treatment Center

Impact of Nutrition on Male Fertility

Ladan Giahi (PhD)

Avicenna Research Institute & Infertility treatment Center

Tehran- October 2016



Why Nutrition Modification Assist ART?

Ovulation
Sperm Quality
Oocyte
Embryo

Obesity.....Adipokines
Poly cystic ovarian Syndrome

Richness of evidence
Epidemiological data
animal models
Clinical intervention trials

Diet Quality

Periconception & Preconception
on
Pregnancy Outcome
Fetal origin of disease

Influencing Success Rate in Assisted
Reproduction Techniques

IUI

ICSI

IVF

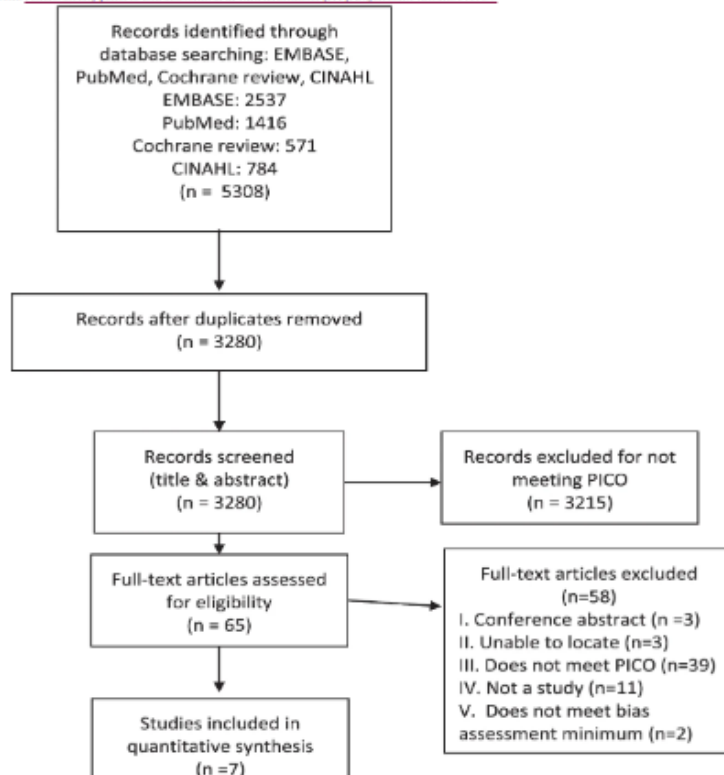
REVIEW

Open Access



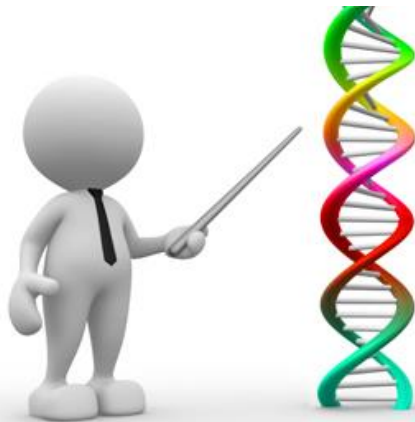
Female dietary patterns and outcomes of in vitro fertilization (IVF): a systematic literature review

From: [Female dietary patterns and outcomes of in vitro fertilization \(IVF\): a systematic literature review](#)



Studies were potentially hindered by methodological challenges (misclassification of exposure, left truncation, and lack of comprehensive control for confounding) with an associated risk of bias. In particular, studies of the MedDiet were highly heterogeneous in study population, methods, and findings,

Cellular responses are dependent on environmental exposures



PHENOTYPE = **20%** + **80%**
GENOTYPE **ENVIRONMENT**



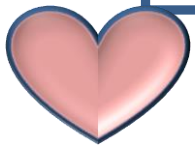
اندیکاسیون فعلی ارجاع در مرکز

- BMI تنها اندیکاسیون ارجاع هست از دید اکثر متخصصین!!!!

- گرسنگی سلولی
- ترکیب دریافت
- زمان بندی دریافت

Obesity per se influence

- endocrine function
- oocyte and sperm quality
- embryo quality
- endometrial receptivity and implantation
- Pregnancy and live birth rate, miscarriage rate



Metabolic and reproductive health of the **offspring** is also negatively **affected** by both **maternal and paternal** obesity



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INVITED REVIEW

First International Journal of Andrology
andROLOGIA WILEY



Obesity and male infertility: Mechanisms and management

BMI is considered to have a **low sensitivity** to appropriately determine adiposity and may **under-estimate** or **overestimate** the risk of obesity in a significant proportion of the population.



Series

Origins of lifetime health around the time of conception: causes and consequences

Prof Tom P Fleming PhD ^a, Adam J Watkins PhD ^d, Miguel A Velazquez PhD ^e, Prof John C Mathers PhD ^f, Prof Andrew M Prentice PhD ^g, Prof Judith Stephenson FFPH ^h, Mary Barker PhD ^{b, i}, Prof Richard Saffery PhD ^j, Prof Chittaranjan S Yajnik MD ^k, Judith J Eckert PhD ^c, Prof Mark A Hanson DPhil ^{c, i}, Prof Terrence Forrester PhD ^l, Prof Peter D Gluckman MD ^{m, n}, Prof Keith M Godfrey PhD ^{b, c, i}  

- ✓ Epigenetic
- ✓ cellular
- ✓ physiological, and metabolic processes

Meta-analysis of mouse paternal and maternal protein undernutrition: distinct parental **periconceptional contributions** to postnatal outcomes

با پیشرفت تکنولوژی تغییر پارادایم در تحقیقات تغذیه ایجاد شده

- Nutrition is in a state of great confusion, especially for the general public.
- Mainly the result of the reductionist paradigm applied to nutrition research for more than a century

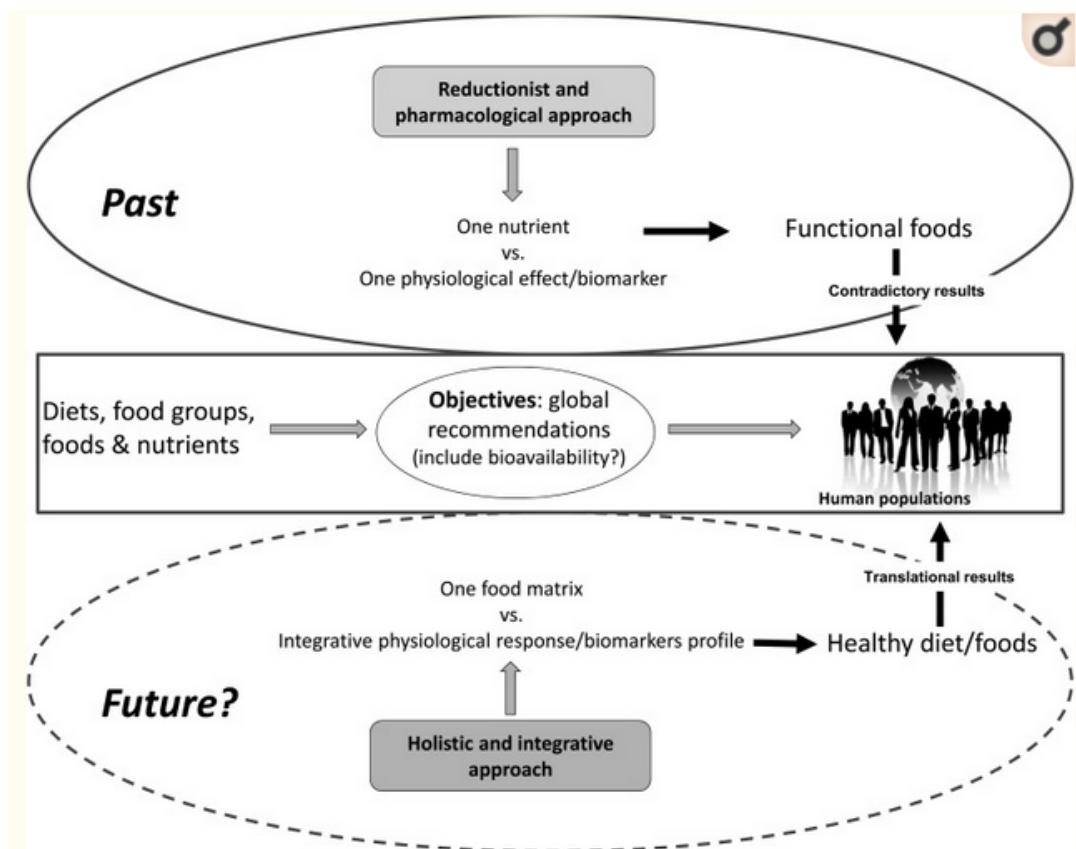


FIGURE 5

Research



Cite this article: Camus MF, Moore J, Reuter M. 2020 Nutritional geometry of mitochondrial genetic effects on male fertility. *Biol. Lett.* **16**: 20190891.
<http://dx.doi.org/10.1098/rsbl.2019.0891>

Evolutionary biology

Nutritional geometry of mitochondrial genetic effects on male fertility

M. F. Camus, J. Moore and M. Reuter

Research Department of Genetics, Evolution and Environment, University College, Gower Street, London WC1E 6BT, UK

 MFC, 0000-0003-0626-6865

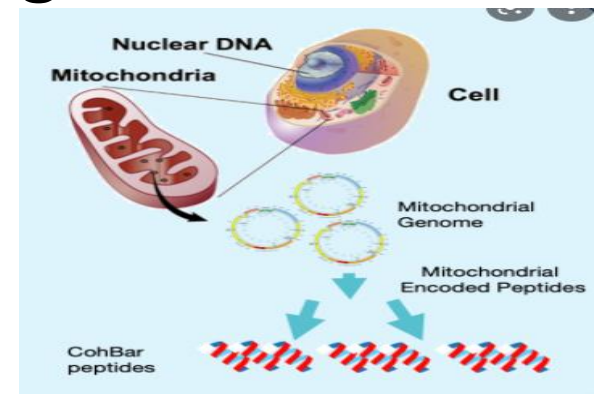
Organismal fitness is partly determined by how well the nutritional intake matches sex-specific metabolic requirements. Metabolism itself is underpinned by complex genomic interactions involving products from both nuclear and mitochondrial genomes. Products from these two genomes

Nutritional geometry can study :

Nuclear genes (nuDNA) are not the only genetic determinant of metabolic function.

Genes encoded within the mitochondria (mtDNA) also play a major role in metabolism, signalling and its regulation .

We would therefore expect fitness to depend on the interaction between both genomes



Organismal fitness

- Organismal fitness is partly determined by how well the nutritional intake matches sex-specific metabolic requirements.
- Metabolism itself is underpinned by complex genomic interactions involving products from **both nuclear and mitochondrial** genomes.
- Products from these two genomes must coordinate how nutrients are extracted, used and recycled, processes vital for fuelling reproduction

وزن به تنهایی اندیکاسیون کافی برای ارجاع
است؟

Real issue is about foods taken as a whole
and therefore about their **degree of**
processing, which affects both the food
matrix and composition

**Perspective: Reductionist Nutrition Research Has Meaning
Only within the Framework of Holistic and Ethical
Thinking.**

Adv. Nutr 2018 Nov 1;9(6):655-670

Main Goal: Optimizing Obesity Management

Scientific advances:

- ✓ Energy hemostasis..... Set points
- ✓ Neural circuits in hypothalamus and hindbrain... leptin discovery
- ✓ Systemic **molecular and cellular homeostatic dysfunction** rather than limited to fat accumulation
- ✓ Complex metabolic misbalances in key cell types including adipocytes, hepatocytes and myocytes with a different etiologies
 - Genetics
 - Epigenetic
 - biological stress
 - Chronic unhealthy diet



Diet therapy and nutrition
counseling is beyond calorie
restriction, beyond
pharmacotherapy

Why you eat is more important than **what** you eat !!!

رویکرد ما رویکرد عقربه ترازویی
خام نباید نباشه

What is nutrition counseling?



Primary engines of the obesity epidemic

Environment stressors

Mental stressors

Emotional stress

Social stress

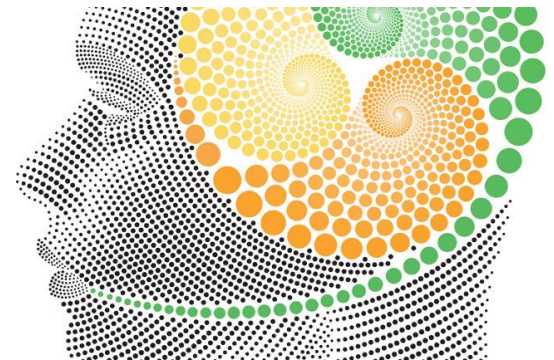


Inner talk mask self awareness



Neural Systems Controlling the Drive to Eat: Mind Versus Metabolism

- Metabolic need is translated into strong behavioral actions that successfully compete with other motivated behavior, the role of the “cognitive and emotional brain” cannot be neglected





Emotional hunger Vs physical hunger

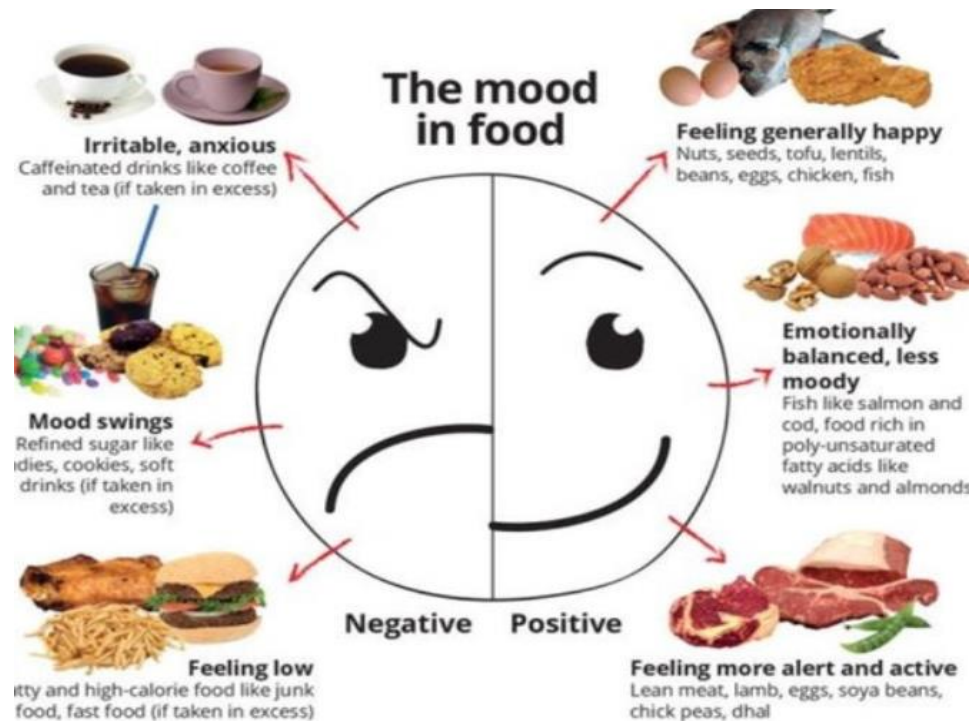
Head Hunger	Physical Hunger
Comes on suddenly	Occurs gradually and builds to hunger pangs
You crave specific food such as ice cream, pizza, and other comfort foods that will only meet your need right now	You are actually hungry therefore you are open to a variety of food options
You feel like you need to eat immediately to be satisfied	Physical hunger can usually wait
You are likely to keep eating even when you are full because you are binge eating or mindlessly eating	You are likely to stop eating once you are full and satisfied
You will likely feel guilty after emotionally eating	Will leave feelings of satisfaction because you are fueling your body

ارتباط تنگاتنگ غذا خوردن و خلق و خوی...



نمیدونم چرا همش در حال خوردنم
انگار یک سوراخ تو شکمم دارم

من همیشه سیرم



A Common Example:

- Women with PCOS are **six times** more likely to suffer from **eating disorders**
- **One-third** of women with PCOS suffer from **binge eating disorder**.
- Every woman with PCOS has unique nutritional concerns some unique to PCOS & some unique to her



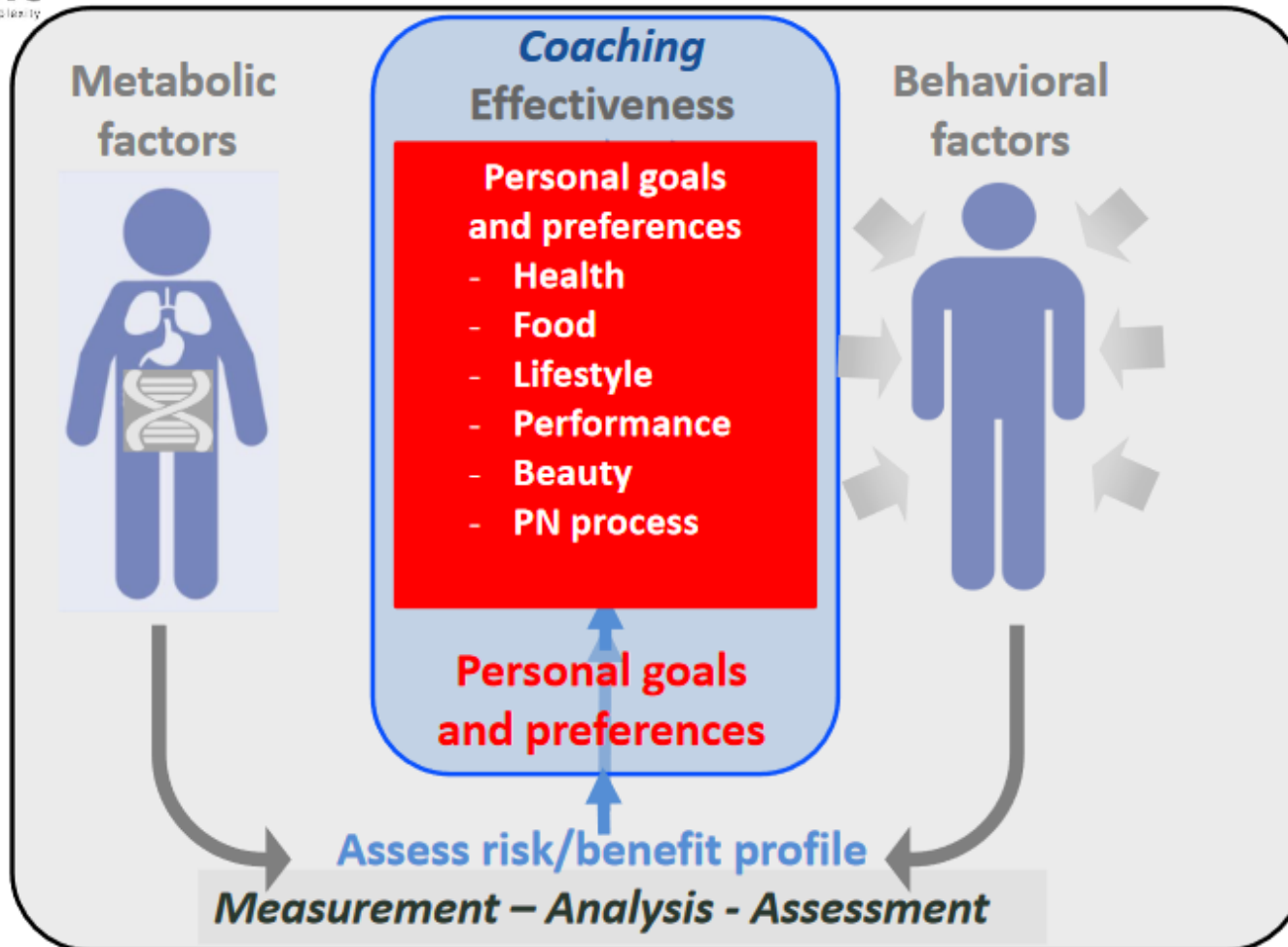
رویکرد نگرش محور و رفتارگرایانه در مشاوره تغذیه
برخاسته از دانش و تجربه

Clear image of values and goals

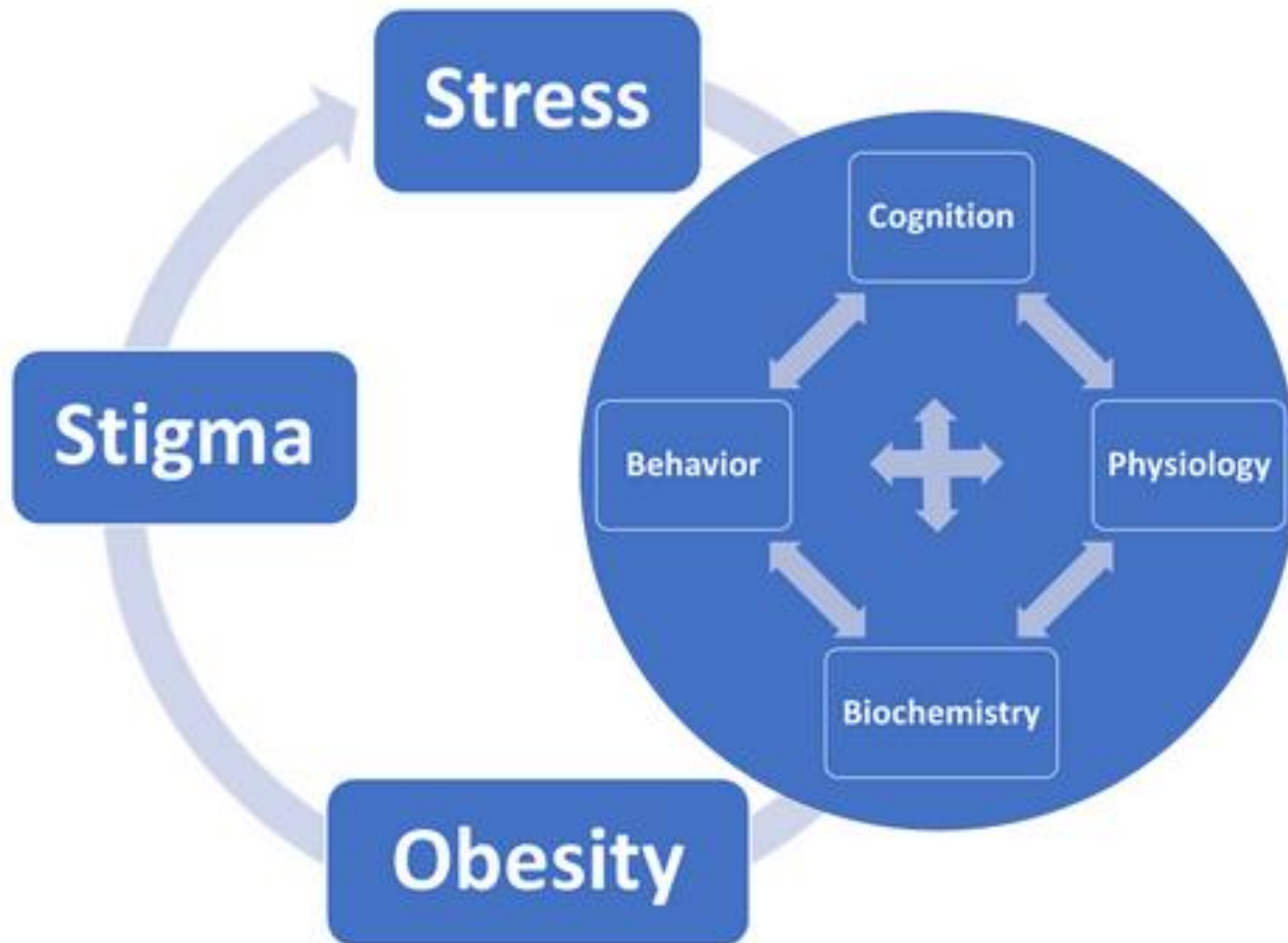


ارزیابی چند لایه ای

.....
complexity



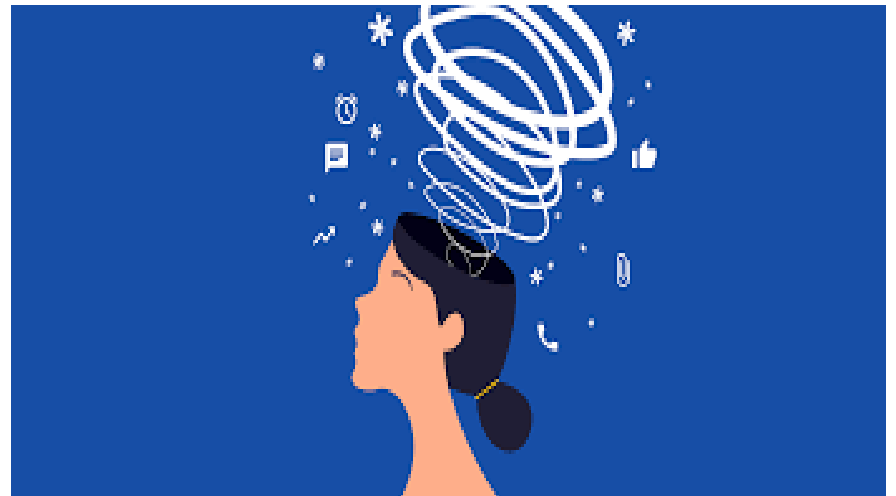
Multiple level Assessment



The only way to get rid of stress and
become mindful

Clear Values..... Focus.....Do it

آگاهی هر جا باشد، تمرکز هر جا باشد، انرژی هر جا باشد آفرینش آن جاست



Learn..... Do Reward

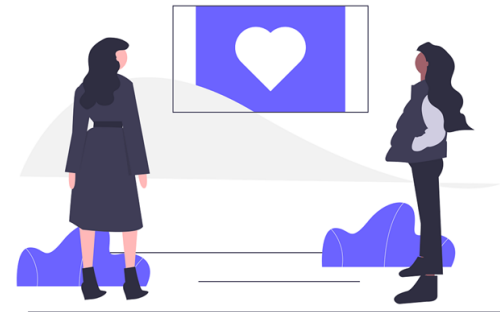
تقویت اراده مثل تقویت عضله است....
کوتاه کردن فاصله تصمیم تا اجرا



Nutrition Coaching

Aim to:

- **empowerment** : mobilize internal strengths and external resources
- **Skill**
- **Confidence**.... to feel confident about cooking and eating healthy, whether at home or on-the-go.
- **Highly motivated** **based on values**



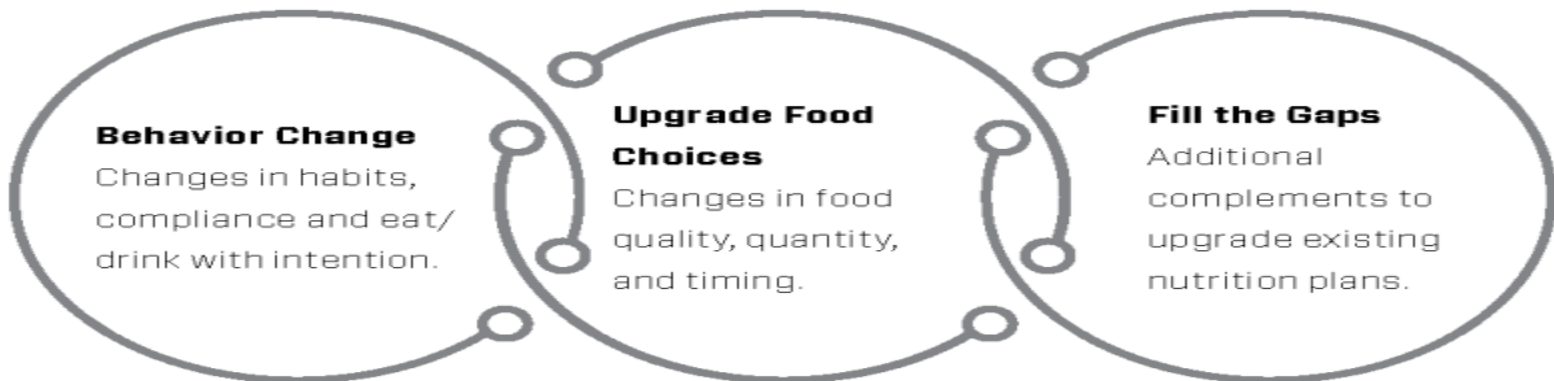
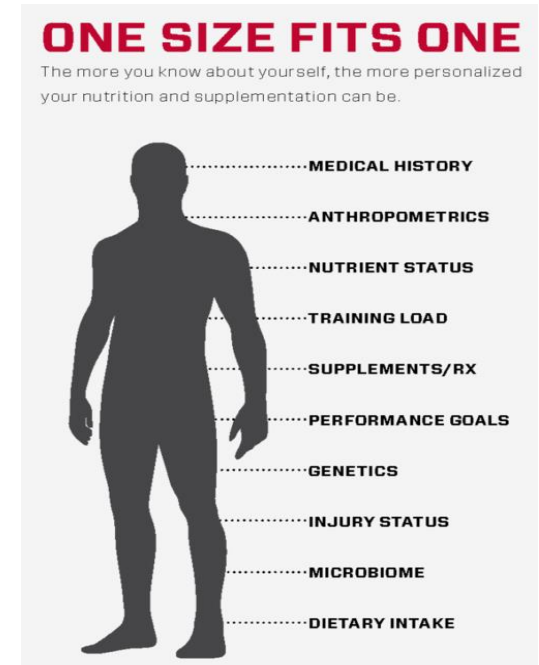
Personalized Nutrition Assessment

- Review all aspects of your lifestyle to get a good picture of what one has been through on her health status journey and where she is now
- Deep **one hour long** assessmentreflective listening
- Detailed nutrition assessment of **eating habits and food choices**
- Assessment and **education** around nutrition for health condition so patient really understand what's happening to her body
- clear up false information and odd expectations



Follow up nutrition coaching sessions

- ❖ Individualized intervals 2 to 4 weeks
- ❖ Discuss the challenges
 - ❖ Struggling with strong cravings
 - ❖ Eating for emotional reasons
 - ❖ Difficulty planning meals



اندیکاسیون های ارجاع بر اساس شواهد علمی

- غربالگری تغذیه زوجین در بدو تشکیل پرونده از نظر الگوی غذایی
- ارجاع مشاوره تغذیه و پیگیری در
 - مردان با آنالیز اسپرم مختل
 - پره ناتال با سابقه دیابت و یا دیابت بارداری و یا **سقط** مستقل از وزن
 - اندومتریوز: نیاز به تحقیقات بیشتر
 - جراحی لاپاروسکوپی اندومتریوز: مشاوره قبل از عمل

RESEARCH

Open Access

Mediterranean diet improves embryo yield in IVF: a prospective cohort study



Hongmei Sun[†], Yihua Lin[†], Dongxia Lin, Chang Zou, Xiangli Zou, Lan Fu, Fanhua Meng and Weiping Qian^{*}





Thanks For Your Attention



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