



GeneFood: alimente seus genes para viver mais e melhor

*Uma abordagem simplificada da Modulação
Epigenética e da Nutrição de Precisão*

MÓDULO FINAL - AULA 1

GeneFood Environment

Na minha prática clínica, eu não foco em doenças — caminho pelo lado da **saúde**. Não abordo prevenção de câncer, Alzheimer ou osteoporose; proponho otimizar a saúde. E, quando a saúde é bem cuidada, o restante se organiza naturalmente.

“Onde você coloca a sua
atenção, você coloca a sua
energia.”

– *Joe Dispenza, neurocientista americano*



Porém, em se tratando de questões do meio ambiente, é diferente. Existem fatores ambientais que influenciam a expressão dos nossos genes e que nem sempre estão sob nosso controle direto. Compreendê-los nos permite fazer escolhas mais conscientes, mais **coerentes** e proteger a saúde de forma mais ampla.

O que os genes não gostam no ambiente?

O ambiente gera estímulos que são processados pelo organismo, influenciando a regulação biológica, emocional e **vibracional**.

Nosso corpo lê as informações do meio o tempo todo: luz, formas, cores, sons, organização, simetria, harmonia, zelo, capricho, detalhes.

Tudo isso "conversa" com os nossos genes, mesmo se você não estiver consciente deste processo. Pois, sim, nossos genes são sistemas que respondem continuamente às informações que recebem.

Porém, a sensibilidade é capaz de transformar espaços,
revitalizar, restaurar, embelezar, sublimar...

... e transformar você!

O que queremos com esta aula é **despertar** a sua sensibilidade para atuar sobre o meio que lhe cerca.

Fatores ambientais epigenéticos estressores



Excesso de radiação eletromagnética: um estressor biológico silencioso

- Radiação ultravioleta (UVB), linhas de transmissão de energia (alta tensão), antenas, Wi-Fi, celulares...



Contents lists available at ScienceDirect

Redox Biology

journal homepage: www.elsevier.com/locate/redox

Protease-activated receptor 2 induces ROS-mediated inflammation through Akt-mediated NF- κ B and FoxO6 modulation during skin photoaging

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ARTICLE INFO

Keywords:

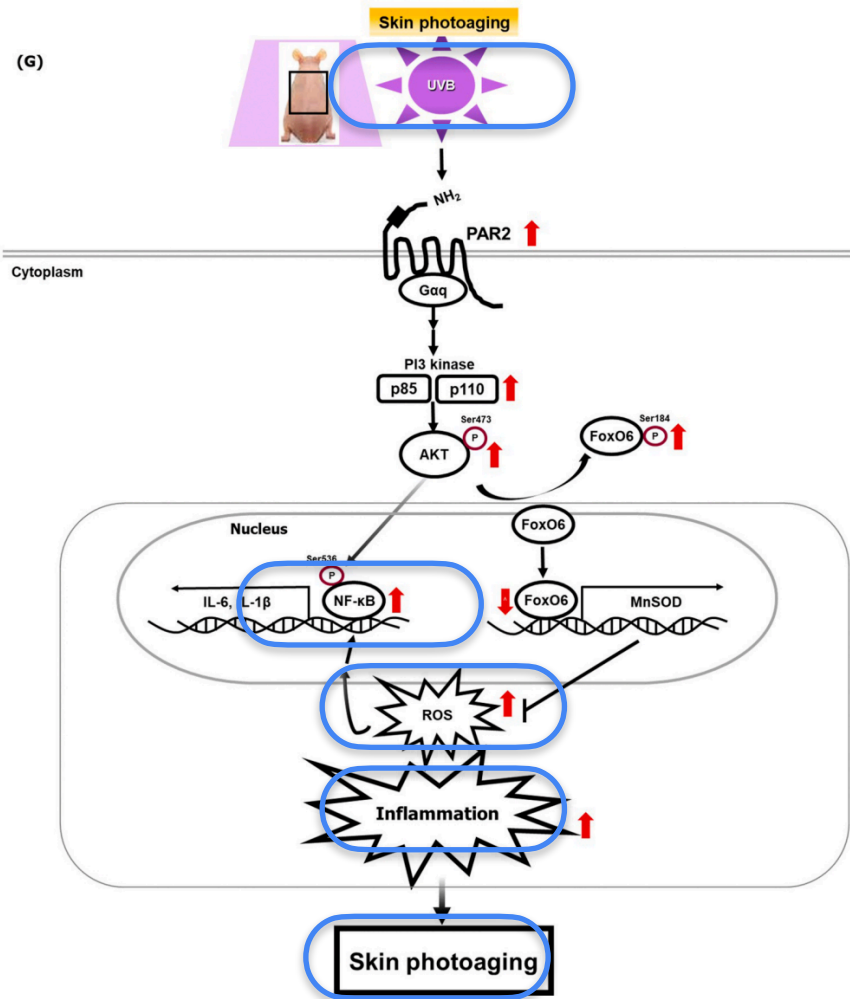
Protease-activated receptor 2
NF- κ B
FoxO6
ROS
Inflammation
Skin photoaging

ABSTRACT

Long-term exposure to ultraviolet irradiation to skin leads to deleterious intracellular effects, including reactive oxygen species (ROS) production and inflammatory responses, causing accelerated skin aging. Previous studies have demonstrated that increased expression and activation of protease-activated receptor 2 (PAR2) and Akt is observed in keratinocyte proliferation, suggesting their potential regulatory role in skin photoaging. However, the specific underlying molecular mechanism of PAR2 and the Akt/NF- κ B/FoxO6-mediated signaling pathway is not clearly defined. In this study, we first used the UVB-irradiated photoaged skin of hairless mice and observed an increase in PAR2 and G α q expression and PI3-kinase/Akt, NF- κ B, and suppressed FoxO6. Consequently, increased levels of proinflammatory cytokines and decreased levels of antioxidant MnSOD was observed. Next, to investigate PAR2-specific roles in inflammation and oxidative stress, we used photoaged hairless mice topically applied with PAR2 antagonist GB83 and photoaged PAR2 knockout mice. PAR2 inhibition and deletion significantly suppressed inflammatory and oxidative stress levels, which were associated with decreased IL-6 and IL-1 β levels and increased MnSOD levels, respectively. Furthermore, NF- κ B phosphorylation and decreased FoxO6 was reduced by PAR2 inhibition and deletion *in vivo*. To confirm the *in vivo* results, we conducted PAR2 knockdown and overexpression in UVB-irradiated HaCaT cells. In PAR2 knockdown cells by si-PAR2 treatment, it suppressed Akt/NF- κ B and increased FoxO6, whereas PAR2 overexpression reversed these effects and subsequently modulated proinflammatory target genes. Collectively, our data define that PAR2 induces oxidative stress and inflammation through Akt-mediated phosphorylation of NF- κ B (Ser536) and FoxO6 (Ser184), which could be a critical upstream regulatory mechanism in ROS-mediated inflammatory response.

1. Introduction

oxidative damage [4]. However, the detailed signaling pathways, action mechanisms, and regulatory signaling molecules of this process are not fully defined.



RADIOFREQUENCY ELECTROMAGNETIC RADIATION FROM WI-FI AND ITS EFFECTS ON HUMAN HEALTH, IN PARTICULAR CHILDREN AND ADOLESCENTS

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ABSTRACT

Radiofrequency electromagnetic radiation emitted from Wi-Fi devices is nonionizing radiation. The frequencies used in wireless technology are similar to those applied in mobile telephony. Due to the much lower output power of devices using Wi-Fi compared to mobile phones, the degree of exposure to radiation is also lower. Most of the research on Wi-Fi has been carried out in less favorable or adverse conditions, involving higher power values of devices (peak values instead of average values) and smaller distances of working devices from measuring points. None of the studies conducted so far have indicated that there were the exceedances of the permissible values of radiofrequency electromagnetic radiation contained in the Polish and global legal regulations. Similar to the research related to the impact of mobile telephony on human health, the studies conducted until now focusing on exposure to Wi-Fi are considered ambiguous as they do not give a definitive answer on the possible negative (including carcinogenic) effects on human health. Because of the continuous development of wireless networks, there is a need for further research on this topic. Moreover, due to the high popularity of devices using Wi-Fi among children and adolescents, whose period of exposure to electromagnetic

Review of the scientific evidence on the individual sensitivity to electromagnetic fields (EHS)

Dariusz Leszczynski ¹

Affiliations + expand

PMID: 34229366 DOI: [10.1515/reveh-2021-0038](https://doi.org/10.1515/reveh-2021-0038) 

Abstract

Part of the population considers themselves as sensitive to the man-made electromagnetic radiation (EMF) emitted by powerlines, electric wiring, electric home appliance and the wireless communication devices and networks. Sensitivity is characterized by a broad variety of non-specific symptoms that the sensitive people claim to experience when exposed to EMF. While the experienced symptoms are currently considered as a real life impairment, the factor causing these symptoms remains unclear. So far, scientists were unable to find causality link between symptoms experienced by sensitive persons and the exposures to EMF. However, as presented in this review, the executed to-date scientific studies, examining sensitivity to EMF, are of poor quality to find the link between EMF exposures and sensitivity symptoms of some people. It is logical to consider that the sensitivity to EMF exists but the scientific methodology used to find it is of insufficient quality. It is time to drop out psychology driven provocation studies that ask about feelings-based non-specific symptoms experienced by volunteers under EMF exposure. Such research approach produces only subjective and therefore highly unreliable data that is insufficient to prove, or to disprove, causality link between EHS and EMF. There is a need for a new direction in studying sensitivity to EMF. The basis for it is the notion of a commonly known phenomenon of individual sensitivity, where individuals' responses to EMF depend on the genetic and epigenetic properties of the individual. It is proposed here that new studies, combining provocation approach, where volunteers are exposed to EMF, and high-throughput technologies of transcriptomics and proteomics are used to generate objective data, detecting molecular level biochemical responses of human body to EMF.

Keywords: ELF-EMF; RF-EMF; electromagnetic hyper-sensitivity; provocation studies; survey studies.



Poluição do ar

- Concentração industrial.
- Emissão de veículos.
- Poeira de obras e construção civil.
- Queimadas e incêndios florestais.
- Ambientes fechados e mal ventilados.
- Produtos de limpeza e sprays químicos.

Poluição do ar

> [Ecotoxicol Environ Saf.](#) 2025 Mar 1:292:117966. doi: 10.1016/j.ecoenv.2025.117966.
Epub 2025 Feb 28.

Air pollution and prostate cancer: Unraveling the connection through network toxicology and machine learning

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Affiliations + expand

PMID: 40022828 DOI: [10.1016/j.ecoenv.2025.117966](#) 

Free article

Abstract

Background: In recent years, air pollution has been demonstrated to be associated with the occurrence of various diseases. This study aims to explore the potential association between air pollutants and prostate cancer (PCa) and to identify key genes that may play a critical bridging role in this process.



Poluição sonora

- Barulho contínuo nas cidades e aceleração desrespeitosa de carros e motocicletas.
- Falta de separação de zonas comerciais e residenciais.
- Volume alto de aparelhos de som, especialmente em horários inadequados.
- Refeições em locais com televisão em volume alto.

A poluição sonora mantém o sistema nervoso em estado constante de **alerta**, favorecendo estresse, irritação e sobrecarga mental.

Além de prejudicar o sono, o descanso da mente, a digestão e a audição, o excesso de ruído pode estimular processos **inflamatórios** no organismo, contribuindo para o desequilíbrio da saúde e o surgimento de diversas doenças.

> [Sci Total Environ.](#) 2024 Nov 15;951:175743. doi: 10.1016/j.scitotenv.2024.175743.
Epub 2024 Aug 23.

Causal effects of noise and air pollution on multiple diseases highlight the dual role of inflammatory factors in ambient exposures

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Affiliations + expand

PMID: 39182784 DOI: [10.1016/j.scitotenv.2024.175743](#)

Abstract

Background: Noise and air pollution are significant environmental threats with proven adverse health effects. However, the causality between these ambient exposures and disease is still largely unknown. This study aims to provide genetic evidence for this gap and investigates the dual role of inflammatory factors, emphasizing the need for integrated public health strategies.

Methods: We included noise and air pollution as exposures, 91 inflammatory factors as mediators, and 26 diseases as outcomes. We explored causal relationships using Mendelian randomization. To ensure the reliability, we screened single nucleotide polymorphisms (SNPs) closely associated with exposure as instrumental variables (IVs), and assessed the pleiotropy and heterogeneity of these IVs.

Results: Our results suggest that "Hearing difficulty/problems with background noise" increases the risk of hypertension, bronchitis, and menopause; loud music exposure frequency increases the risk of bronchitis; noisy workplace raises the risk of hypertension, coronary heart disease, narcolepsy, and irritable bowel syndrome; NO₂ increases the risk of myocardial infarction and chronic heart failure; NO_x increases the risk of pneumonia and inflammatory diseases of female pelvic organs; and PM₁₀ increases the risk of myocardial infarction, narcolepsy, and type 2 diabetes; PM_{2.5-10} increases the risk of developing pneumonia and type 2 diabetes. Furthermore,

Este estudo fornece a primeira evidência genética que relaciona a poluição sonora e a poluição do ar a diversas doenças.

Sugere que exposições ambientais, como música alta, ambientes barulhentos e má qualidade do ar podem favorecer diversas doenças ao ativarem processos **inflamatórios** no organismo.

A inflamação aparece como um **elo central** entre o ambiente agressivo e o adoecimento, mantendo o corpo em estado constante de estresse e desequilíbrio fisiológico.



Poluição visual e excesso de estímulos

- Painéis visuais (outdoors), placas, propaganda política, etc.
- Fachadas de lojas com informações desnecessárias (ex: materiais de construção: vende-se tijolo, cimento, brita, telha).
- Fiação elétrica exposta e desorganizada.
- Trânsito intenso, criando um "congestionamento visual".

O excesso de estímulos visuais aumenta a carga de informação para o cérebro, reduzindo foco e clareza mental e mantendo o sistema nervoso em **estado de alerta**, com repercussões fisiológicas ao longo do tempo.

Muitas pessoas tendem a apresentar um cansaço **desproporcionalmente** mais intenso ao final do dia. Além disso, isso resulta em menor harmonia estética ambiental.

scientific reports



OPEN Urban visual pollution: comparison of two ways of evaluation—a case study from Europe

Klaudia Borowiak¹, Anna Budka², Marta Lisiak-Zielińska^{1✉}, Kinga Robaszkiewicz¹, Arlinda Cakaj¹ & Tropikë Agaj²

Visual pollution by outdoor advertisements (OAs) of the urban landscape in the old town of Gniezno city (Poland) was the main aim of the presented work. For this purpose, the part of Warszawska Street located near the old market was selected. The detailed objective of the work was to evaluate the effect of OA on the building perception and compare two different methods to check the possibility of their interchangeably potential. The city audit and public opinion about selected buildings were performed. The photographs with and without OAs were also analyzed. The statistical analysis was performed to find the significant differences between these two methods and define differences between groups of respondents. In general, the results revealed the strong effect of the building quality (condition and appearance of the building) on the final score of the building perception. This was valid for both evaluation methods. The significant differences between building perception with and without OAs and groups of respondents were found only for the building with good facade quality. While, in the case of low-quality buildings the perception of the urban landscape was low regardless of the presence of OAs. Moreover, we can primarily conclude that city audit and survey of public opinion can be used

O que vem **primeiro**? Um ambiente visualmente confuso leva à perda de percepção, ou uma menor percepção favorece ambientes cada vez mais saturados?

Na realidade, o ambiente influencia a nossa percepção
— e a nossa percepção também molda o ambiente.
Trata-se de um ciclo.

A neuroepigenética mostra que o cérebro processa estímulos ambientais de forma **contínua** — grande parte deste processamento é implícito, automático e não consciente, e mesmo o que não percebemos pode modular a expressão dos nossos genes.



5

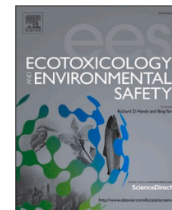
Exposição a químicos ambientais

- Disruptores endócrinos:
 - agrotóxicos
 - plásticos
 - tintas e solventes
 - cosméticos
 - fragrâncias
 - panelas antiaderentes

Os disruptores endócrinos são químicos ambientais capazes de interferir nas funções hormonais, metabólicas e neurológicas, modulando a expressão genética **negativamente** e contribuindo para uma sobrecarga tóxica sistêmica silenciosa e cumulativa.

Contents lists available at [ScienceDirect](#)

Ecotoxicology and Environmental Safety

journal homepage: www.elsevier.com/locate/ecoenv

Integrative causal and single-cell analyses reveal genes responsive to endocrine disruptors driving human male infertility

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Male infertility is a growing global health concern increasingly linked to environmental exposure to endocrine-disrupting chemicals (EDCs).



Contaminação direta ou indireta da água (através dos alimentos)

- Metais pesados (chumbo, mercúrio, arsênio) — em tubulações ou fontes naturais contaminadas
- Microplásticos (peixes)
- Cloro e subprodutos da desinfecção
- Resíduos de medicamentos na água potável
- Contaminação microbiológica (bactérias, parasitas)

Metais pesados: A contaminação da água e alimentos pode causar muitos efeitos em adultos e, principalmente, em crianças, estando associada a alterações neurológicas, dificuldades cognitivas, distúrbios hormonais, inflamação crônica e aumento do risco de câncer.

Brief status of contamination in surface water of rivers of India by heavy metals: a review with pollution indices and health risk assessment

Akshay Botle¹, Sayli Salgaonkar¹, Rahul Tiwari², Shushama Ambadekar³,
Gayatri R Barabde^{4, 5}

Affiliations + expand

PMID: 36583797 DOI: [10.1007/s10653-022-01463-x](https://doi.org/10.1007/s10653-022-01463-x)

Abstract

Water is polluted via various means; among these, heavy metal (HM) contamination is of great concern because of the involvement of metal toxicity and its effect on aquatic environment. The significance and novelty of this study is that it focuses on assessment of HMs in the surface water of Indian rivers only from 1991 to 2021. For this, multivariate studies were used to find multiple sources of HMs. The average concentrations of Fe, Cr, Pb, Ni, Cd, Mn, Hg, Co, and As in surface water of rivers were found to far exceed the permitted limits established by both World Health Organisation and Bureau of Indian Standards. The HM indices like HM pollution, degree of contamination, evaluation index, water pollution, and toxicity load data all indicated that the rivers under investigation are heavily polluted by HMs. In this study, health risk assessment indicated non-carcinogenic effects of Fe, Cr, Cu, Pb, Cd, Mn, Hg, Co, and As in children and those of Fe, Cr, Pb, Cd, Hg, Co, and As in adults. Values investigated for Cancer index were higher for Cr, Pb, Ni, Cd, and As indicating a high risk of cancer development in adults and children via the ingestion pathway than the cutaneous pathway. Moreover, children are more prone to be exposed to both non-carcinogenic and carcinogenic effects of HMs than adults. To reduce human dangers, remediation approaches such as environment-friendly, cost-effective adsorbents, phytoremediation and bio-remediation, as well as tools like bio-sensors, should be included in river management plans.

Keywords: Health risk assessment; Heavy metals; Rivers; Surface water.



Presença de mofo e umidade

Podem ativar **continuamente** o sistema imune e aumentar processos inflamatórios, favorecendo asma, alergias respiratórias e infecções de repetição.

The effect of mold sensitization and humidity upon allergic asthma

Don Hayes Jr ¹, Manan A Jhaveri, David M Mannino, Heather Strawbridge, James Temprano

Affiliations + expand

PMID: 22524711 DOI: [10.1111/j.1752-699X.2012.00294.x](https://doi.org/10.1111/j.1752-699X.2012.00294.x)

Abstract

Introduction: Humidity is commonly associated with increased airway hyperresponsiveness in asthma.

Objective: To examine mold sensitization in patients with allergic asthma or allergic rhinitis and self-reports of humidity as exacerbating factors of clinical symptoms.

Methods: A retrospective, cross-sectional study at a University hospital outpatient allergy and asthma clinic was performed. A total of 106 patients with either allergic asthma or allergic rhinitis completed standard prick-puncture skin testing with 17 allergens and controls and completed standardized forms addressing trigger factors for clinical symptoms.

Results: Allergic asthmatics sensitized to *Cladosporium* were more likely to have a more severe asthma severity class (odds ratio = 4.26, confidence interval = 1.30-16.93). Sensitization to *Alternaria*, *Cladosporium*, *Helminthosporium*, *Aspergillus* and *Dermatophagoides pteronyssinus* in asthma was associated with higher likelihood for previous hospitalization, while sensitization to *Cladosporium*, *Helminthosporium*, *Aspergillus*, *Dermatophagoides pteronyssinus* and cockroach in asthma was associated with higher likelihood of having reduced pulmonary function based on forced expiratory volume in 1s. Furthermore, allergic asthmatics more commonly reported humidity as an exacerbating factor of symptoms than did patients only with allergic rhinitis (68.42% vs 42.86%, respectively; $P < 0.05$).

Conclusion: Mold sensitization is highly associated with more severe asthma, while humidity is more of an exacerbating factor in patients with allergic asthma as compared with allergic rhinitis alone. Further delineation between mold sensitization and humidity is needed to determine whether these are independent factors in asthma.

Keywords: allergic rhinitis; allergy; asthma; humidity; mold.

O estudo conclui que a sensibilização ao mofo está fortemente associada a formas mais **graves** de asma, enquanto a umidade atua como um importante fator agravante de asma alérgica.



8

Ingestão excessiva de alimentos ultraprocessados

Pode alterar o microbioma, aumentar a permeabilidade e a inflamação intestinal, desregular o metabolismo, favorecer o ganho de peso, estimular inflamação sistêmica e contribuir para processos de malignidade, especialmente no intestino.

Review > Nat Rev Gastroenterol Hepatol. 2024 Jun;21(6):406-427.

doi: 10.1038/s41575-024-00893-5. Epub 2024 Feb 22.

Ultra-processed foods and food additives in gut health and disease

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Affiliations + expand

PMID: 38388570 DOI: [10.1038/s41575-024-00893-5](https://doi.org/10.1038/s41575-024-00893-5)

Abstract

Ultra-processed foods (UPFs) and food additives have become ubiquitous components of the modern human diet. There is increasing evidence of an association between diets rich in UPFs and gut disease, including inflammatory bowel disease, colorectal cancer and irritable bowel syndrome. Food additives are added to many UPFs and have themselves been shown to affect gut health. For example, evidence shows that some emulsifiers, sweeteners, colours, and microparticles and nanoparticles have effects on a range of outcomes, including the gut microbiome, intestinal permeability and intestinal inflammation. Broadly speaking, evidence for the effect of UPFs on gut disease comes from observational epidemiological studies, whereas, by contrast, evidence for the effect of food additives comes largely from preclinical studies conducted in vitro or in animal models. Fewer studies have investigated the effect of UPFs or food additives on gut health and disease in human intervention studies. Hence, the aim of this article is to critically review the evidence for the effects of UPF and food additives on gut health and disease and to discuss the clinical application of these findings.



Review

Ultra-Processed Food Consumption and Mental Health: A Systematic Review and Meta-Analysis of Observational Studies

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Citation: Lane, M.M.; Gamage, E.; Travica, N.; Dissanayaka, T.; Ashtree, D.N.; Gauci, S.; Lotfaliany, M.; O'Neil, A.; Jacka, F.N.; Marx, W. Ultra-Processed Food Consumption and Mental Health: A Systematic Review and Meta-Analysis of Observational Studies. *Nutrients* **2022**, *14*, 2568. <https://doi.org/10.3390/nu14132568>

Academic Editor: Rosa Casas

Received: 18 May 2022

Accepted: 17 June 2022

Abstract: Since previous meta-analyses, which were limited only to depression and by a small number of studies available for inclusion at the time of publication, several additional studies have been published assessing the link between ultra-processed food consumption and depression as well as other mental disorders. We aimed to build on previously conducted reviews to synthesise and meta-analyse the contemporary evidence base and clarify the associations between the consumption of ultra-processed food and mental disorders. A total of 17 observational studies were included ($n = 385,541$); 15 cross-sectional and 2 prospective. Greater ultra-processed food consumption was cross-sectionally associated with increased odds of depressive and anxiety symptoms, both when these outcomes were assessed together (common mental disorder symptoms odds ratio: 1.53, 95%CI 1.43 to 1.63) as well as separately (depressive symptoms odds ratio: 1.44, 95%CI 1.14 to 1.82; and, anxiety symptoms odds ratio: 1.48, 95%CI 1.37 to 1.59). Furthermore, a meta-analysis of prospective studies demonstrated that greater ultra-processed food intake was associated with increased risk of subsequent depression (hazard ratio: 1.22, 95%CI 1.16 to 1.28). While we found evidence for associations between ultra-processed food consumption and adverse mental health, further rigorously designed prospective and experimental studies are needed to better understand causal pathways.

Keywords: major depressive disorder; anxiety; mental disorders; ultra-processed food; NOVA; meta-analysis; nutritional psychiatry; psychiatry



OPEN ACCESS



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Association between consumption of ultra-processed foods and all cause mortality: SUN prospective cohort study

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Cite this as: *BMJ* 2019;**365**:1949 <http://dx.doi.org/10.1136/bmj.1949>

Accepted: 23 April 2019

ABSTRACT

OBJECTIVE

To evaluate the association between ultra-processed foods and all cause

DESIGN

Prospective cohort study.

SETTING

Seguimiento Universidad de Navarra university graduates, Spain 1999-20

PARTICIPANTS

19 899 participants (12 113 women men) aged 20-91 years followed-up between December 1999 and February 2010. Participants were classified by degree of processing by the NOVA classification and evaluated through a validated 1 frequency questionnaire.

MAIN OUTCOME MEASURE

Association between consumption of ultra-processed foods categorised in low-medium, medium-high, and high

During the past two decades, availability and consumption of ultra-processed foods, characterised by food products with a low nutritional quality and high energy density, has increased markedly in many countries.^{6,7} Between 1990 and 2010 the consumption of ultra-processed foods almost tripled (from 11% to 32% of daily energy intake),⁸ parallel with increases in added sugar content. Ultra-processed foods are industrial formulations made mostly or entirely from substances derived from foods and additives, with little, if any, intact food.⁹ These food products are convenient (durable, ready to eat, or heatable), hyperpalatable (extremely tasty), highly profitable (low cost ingredients), and designed to replace all other food groups with the aid of attractive packaging and intensive marketing.¹⁰

O aumento do consumo de alimentos ultraprocessados entre 1990 e 2010, impulsionado pelo **marketing** intenso, embalagens atrativas, baixa qualidade nutricional e uso crescente de aditivos alimentares, contribuiu para alterações na permeabilidade intestinal, acarretando um aumento sem precedentes de doenças autoimunes e sensibilidades alimentares na história recente da humanidade.

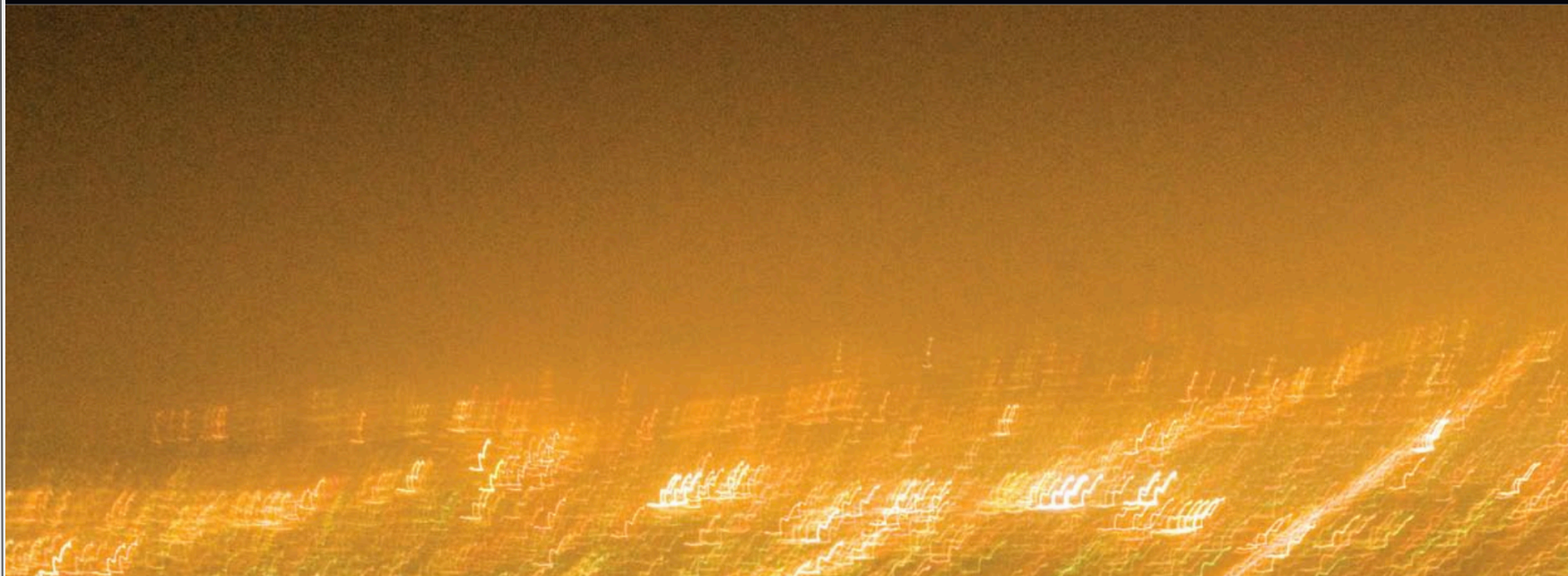


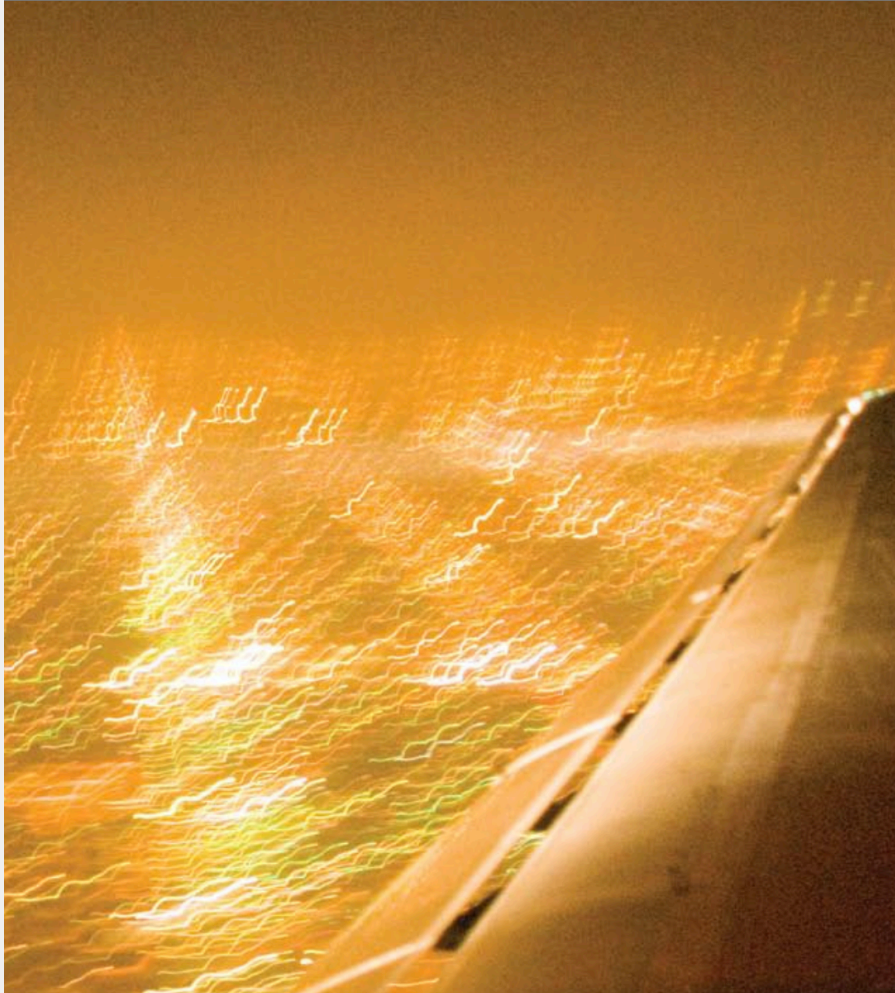
Falta de luz natural durante o dia e excesso de luz artificial à noite

- Desorganização do ritmo biológico e do ciclo sono-vigília.
- Redução dos níveis de energia e de neurotransmissores.
- Alteração dos mecanismos de fome, saciedade e compulsão alimentar.
- Redução da melatonina, da qualidade do sono e dos processos de reparo celular.

Missing the Dark

Health Effects of Light Pollution





In 1879, Thomas Edison's incandescent light bulbs first illuminated a New York street, and the modern era of electric lighting began. Since then, the world has become awash in electric light. Powerful lamps light up streets, yards, parking lots, and billboards. Sports facilities blaze with light that is visible for tens of miles. Business and office building windows glow throughout the night. According to the Tucson, Arizona-based International Dark-Sky Association (IDA), the sky glow of Los Angeles is visible from an airplane 200 miles away. In most of the world's large urban centers, stargazing is something that happens at a planetarium. Indeed, when a 1994 earthquake knocked out the power in Los Angeles, many anxious residents called local emergency centers to report seeing a strange "giant, silvery cloud" in the dark sky. What they were really seeing—for the first time—was the Milky Way, long obliterated by the urban sky glow.

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Falta de contato com o solo (grounding)

A falta de grounding, intensificada pela verticalização das cidades e pelo distanciamento do contato direto com a Terra, pode reduzir o equilíbrio eletrofisiológico do organismo, favorecer processos inflamatórios, aumentar estresse e dor, além de prejudicar o sono, a energia, a circulação e o bem-estar geral.

Epub 2019 Nov 14.

Integrative and lifestyle medicine strategies should include Earthing (grounding): Review of research evidence and clinical observations

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Affiliations + expand

PMID: 31831261 DOI: [10.1016/j.explore.2019.10.005](https://doi.org/10.1016/j.explore.2019.10.005) 

Free article

Abstract

Earthing (also known as grounding) refers to the discovery that bodily contact with the Earth's natural electric charge stabilizes the physiology at the deepest levels, reduces inflammation, pain, and stress, improves blood flow, energy, and sleep, and generates greater well-being. Such effects are profound, systemic, and foundational, and often develop rapidly. Earthing is as simple as routinely walking barefoot outdoors and/or using inexpensive grounding systems indoors while sleeping or sitting, practices that restore a lost and needed electric connection with the Earth. Some 20 studies to date have reported intriguing evidence of wide and significant physiological improvements when the body is grounded vs. non-grounded. The research, along with numerous anecdotal reports, demonstrates that Earthing clearly deserves inclusion in the clinical practice of preventive, alternative, and lifestyle medicine and has great potential to render these approaches more effective.

Keywords: Earthing; Electron deficiency; Grounding.

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Sedentarismo

- redução da massa muscular
- piora da sensibilidade à insulina
- diminuição da densidade óssea
- circulação menos eficiente
- maior tendência inflamatória
- aumento do estresse
- piora do humor
- menor clareza mental
- redução da motivação
- maior tendência a doenças







O Brasil é aproximadamente **11.500 vezes maior** que Singapura em extensão territorial.

Quando Singapura se tornou independente, em 1965, muitos acreditavam que o país não teria futuro. Pequena, sem recursos naturais, com pobreza, desemprego elevado, tensões sociais e infraestrutura precária, Singapura parecia vulnerável demais para prosperar.

A grande transformação começou sob a liderança de Lee Kuan Yew, que acreditava que um país poderia mudar profundamente através de **organização**, educação, disciplina e visão de longo prazo. Seu governo iniciou um combate rigoroso à corrupção, investiu fortemente na educação da população e criou uma **administração pública** altamente eficiente.

Singapura também compreendeu que o ambiente influencia diretamente o comportamento humano, a produtividade, a saúde e a consciência coletiva. Por isso, passou a investir intensamente em limpeza urbana, arborização, transporte público, organização visual, segurança e planejamento arquitetônico. A cidade começou a ser pensada como um organismo integrado.

Além da organização urbana, o país abriu espaço para inovação, tecnologia e comércio internacional. Em poucas décadas, a cidade deixou de ser uma região pobre e tornou-se uma potência econômica, tecnológica e financeira.

Hoje, Singapura é considerada um dos maiores exemplos mundiais de **planejamento urbano** e desenvolvimento estratégico. Sua transformação mostra como ambiente, cultura, educação e visão coletiva podem remodelar profundamente uma sociedade. De certa forma, Singapura demonstra que **cuidar do meio** também é uma forma de modular o comportamento humano e o futuro de uma nação.



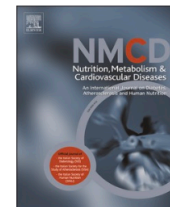
A ligação dos holandeses com as bicicletas é visível nas estatísticas: em 2021, 84% da população da Holanda utilizava bicicletas diariamente. Em Amsterdam, esse número chega a cerca de 63% da população, demonstrando uma forte preferência pelo veículo. Em contrapartida, apenas 7% dos brasileiros optam pela bicicleta como meio de transporte principal.





Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Nutrition, Metabolism and Cardiovascular Diseases

journal homepage: www.elsevier.com/locate/nmcd

Invited Review

Sedentary lifestyle and physical inactivity: A mutual interplay with early and overt frailty

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ARTICLE INFO

Handling Editor: Dr G Targher

ABSTRACT

Aims: In recent years medical science and research are increasingly directed towards a holistic approach that considers health as global well-being rather than solely as the absence of disease. In this framework, lifestyle interventions and, in particular, physical exercise, are of crucial importance in prevention and treatment. Therefore, the purpose of this study is to describe this mutual interplay between physical behaviours, sarcopenia, and frailty, as well as to illustrate the role of structured exercise training in aging and disease.

Data synthesis: Physical activity and exercise training are determinants of lifelong global wellness and healthy aging. On the contrary, sedentary behaviour and physical inactivity are strictly linked to frailty and pre-frailty, both in adults and the elderly, with or without chronic diseases. On the other hand, the presence of pathological conditions is associated with a more inactive and sedentary behaviour. The co-presence of these factors is characterized by a mutual causal exchange in which they are imbricated in a continuous mechanistic interplay

Review

> Clin Investig Arterioscler. 2019 Sep-Oct;31(5):233-240.

doi: 10.1016/j.arteri.2019.04.004. Epub 2019 Jun 17.

Sedentary lifestyle a disease from xxi century

[Article in English, Spanish]

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PMID: 31221536 DOI: [10.1016/j.arteri.2019.04.004](https://doi.org/10.1016/j.arteri.2019.04.004) 

Abstract

Sedentarism and physical inactivity is highly prevalent globally, and are associated with a wide range of chronic diseases and premature deaths. The interest in sedentary behaviour is justified by a growing body of evidence that points to a relationship between this lifestyle and the increase in the prevalence of obesity, diabetes and cardiovascular disease. It has been known throughout history that being inactive is unhealthy, but nowadays almost one-third of the world's population is inactive, thus representing a major public health problem.

Keywords: Cardiovascular disease; Diabetes; Enfermedad cardiovascular; Inactividad física; Physical inactivity; Sedentario; Sedentarism; Sedentarismo; Sedentary.

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Qualidade emocional do ambiente

A qualidade emocional ruim do ambiente (tensões, conflitos, desconfortos, insatisfações) influencia o eixo do **estresse**, podendo gerar inflamação e respostas imunológicas crônicas, com impacto na regulação biológica e emocional ao longo do tempo.

Nurses' work environment and health promotion in relation to psychological distress symptoms, and sleep disturbance: A structural equation modeling approach

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Affiliations + expand

PMID: 39692045 DOI: [10.1111/jnu.13040](https://doi.org/10.1111/jnu.13040) 

Abstract

Background: The healthcare work environment has numerous stressors that can contribute to distress and poor health outcomes among nurses. The impact of distress can be detrimental, resulting in nurses leaving the profession. Thus, it is critical to explore factors in the work environment that contribute to the distress symptoms and behaviors that promote nurses' health.

Objective: This study aimed to examine the constructs associated with the conceptual model of distress, such as the work environment, specifically workload and the practice environment (quality of care, salary, staffing, time, and satisfaction) and associations with psychological distress, sleep disturbance, and health promotion behaviors in nurses, using structural equation modeling.

Design: This study was a cross-sectional survey design collected as part of the Nurse Worklife and Wellness Study (NWWS) using balanced stratified sampling methods.

Methods: A confirmatory factor analysis tested the factorial structure of the latent constructs using weighted least squares estimation with missing data (WLSMV) for the sample ($n = 1170$). A structural equation modeling approach examined the direct and indirect associations between workload, practice environment, health promotion behaviors, psychological distress symptoms, sleep disturbance, and health.

Results: Based on the confirmatory factor analysis, the measurement model reported adequate model fit ($CFI = 0.96$; $TLI = 0.95$; $SRMR = 0.048$ and $RMSEA = 0.039$). The structural model showed that the workload was related to significantly increased psychological distress ($\beta = 1.47$, $p < 0.001$), sleep disturbance ($\beta = 1.22$, $p < 0.01$), and decreased overall health ($\beta = -1.36$, $p < 0.01$). Similarly, a positive practice environment was associated with significantly higher psychological distress ($\beta =$



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Desmatamento e abandono de áreas agredidas

- Menor harmonia ambiental.
- Redução da regulação do sistema nervoso.
- Menor resiliência imunológica.
- Diferentes repercussões na saúde global.
- Prejuízo da sensação de "organização interna".

> [Econ Hum Biol.](#) 2024 Jan;52:101343. doi: 10.1016/j.ehb.2023.101343. Epub 2023 Dec 18.

Deforestation and child health in Cambodia

[Gabriel Fuentes Cordoba](#) ¹

Affiliations + expand

PMID: 38118322 DOI: [10.1016/j.ehb.2023.101343](#) 

Abstract

The impact of deforestation on child nutrition and health in poor regions of the world is a crucial topic to understand some of the implications of climate change on the wellbeing of the most vulnerable populations. I combine precise forest loss data with geocoded data from the Cambodian Demographic Health Surveys to investigate the impact of deforestation around the time of birth on child health. In the baseline analysis I find that exposure to prenatal deforestation lowers birth weight, height-for-age z-scores and weight-for-age z-scores. I explore whether malaria exposure in utero is a potential channel to understand the baseline results. The findings indicate that pregnant women in areas with high rates of deforestation are more likely to be anemic, a proxy for malaria infection.

Keywords: Cambodia; Deforestation; Health; Malaria.

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Topos dos morros: molduras da paisagem

O Código Florestal Brasileiro estabelece proteção para áreas de **topo de morros**, montes, montanhas e serras, reconhecendo essas regiões como Áreas de Preservação Permanente (APPs).

> [Soc Sci Med](#). 2023 Nov;336:116186. doi: 10.1016/j.socscimed.2023.116186. Epub 2023 Aug 19.

Impact of ecological reserves on the local residents' health: Evidence from a natural experiment in China

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Affiliations + expand

PMID: 37778142 DOI: [10.1016/j.socscimed.2023.116186](#) 

Abstract

The potential influence of natural ecosystems on human health has been widely acknowledged globally. Nevertheless, the causality of such a correlation among the middle-aged and older populations in developing countries awaits further investigations. This study aims to understand how a specific natural ecosystem change, namely the establishment of ecological reserves, improves the physical and mental health of middle-aged and older residents in China. Two batches of national key eco-function zones (NKEFZs) in 2011 and 2016 are selected as a quasi-experiment; and a total of 128,755 middle-aged and older residents from a combined data set from the China Family Panel Studies (CFPS) and China Health and Retirement Longitudinal Studies (CHARLS) from 2010 to 2020. A difference-in-differences method was used to identify the causal effects of the natural ecosystem improvement on human health outcomes. The results indicate significant and sustained improvements in the physical health of local middle-aged and elderly residents following the implementation of the NKEFZs policy. Notably, ecological reserves with a water conservation function and those in Karst area have the most salient effects on physical health. Furthermore, this study shows that the creation of ecological reserves improves the mental health of middle-aged and older residents, with the effect varying based on changes in physical health. This study provides new insights into the positive impact of natural ecosystem improvement on human health outcomes, in particular physical and mental health.

Keywords: China; Ecological reserves; Ecosystem; Mental health; Physical health; Quasi-experiment.

Este estudo mostrou que **restaurar e cuidar** do ambiente — como a criação de áreas ecológicas — melhora diretamente a saúde **física e mental** das pessoas, confirmando que o ambiente é um modulador importante da nossa biologia.

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A large, stylized background graphic in a light olive green color. It features a DNA double helix structure on the left side, which transitions into a large, stylized leaf shape on the right side. The leaf has prominent veins and a pointed tip. The entire graphic is set against a dark olive green background.

Arquitetura e espaços desarmônicos

Arquiteturas e ambientes desarmônicos podem gerar tensão **inconsciente**, ativando respostas do sistema nervoso e influenciando a saúde a curto e longo prazo.

Harmony and disharmony as the architectural appearance features of the city

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Abstract. Architecture in the world obeys the laws of symmetry and asymmetry, harmony and disharmony, and, of course, the principles of the golden section. The use of digital technology and innovation allows modern architects to design the structures that have a harmonious style and harmoniously fit into the environment. It is necessary to widely introduce the three-dimensional modeling methods into practice for more effective modern cities' architectural appearance creation.



A simetria e a proporção são princípios naturais que organizam o mundo ao nosso redor. Estes conceitos ajudaram a entender melhor a natureza, a arquitetura e a forma como percebemos o mundo.

Arquiteturas harmônicas influenciam positivamente o cérebro e a consciência humana e devem ser preservadas, respeitando a natureza, a cultura e o passado.

Criar ambientes equilibrados pode contribuir para uma sociedade mais consciente, com menos pensamentos negativos e menos conflitos.

Por isso, é importante desenvolver uma **consciência coletiva** que valorize a harmonia na arquitetura, na natureza e nas relações humanas.



Você não
pode pintar
sua casa
como quiser
na Itália



italianofacil

Seguir



italianofacil 4 sem

🇮🇹 Você não pode simplesmente escolher qualquer cor pra sua casa na Itália.

Sim, até a fachada é regulada.

E é exatamente por isso que cidades como Firenze, Roma e Venezia parecem tão harmônicas — não é acaso, é planejamento.

Existe um conjunto de regras chamado Piano del Colore que define o que pode (e o que não pode) ser feito nas fachadas dos centros históricos.

E quando você entende isso, começa a enxergar a Itália com outros olhos.

Você concorda com esse tipo de regra ou acha exagero? 🤔



1,8 mil



101



31



15 de abril



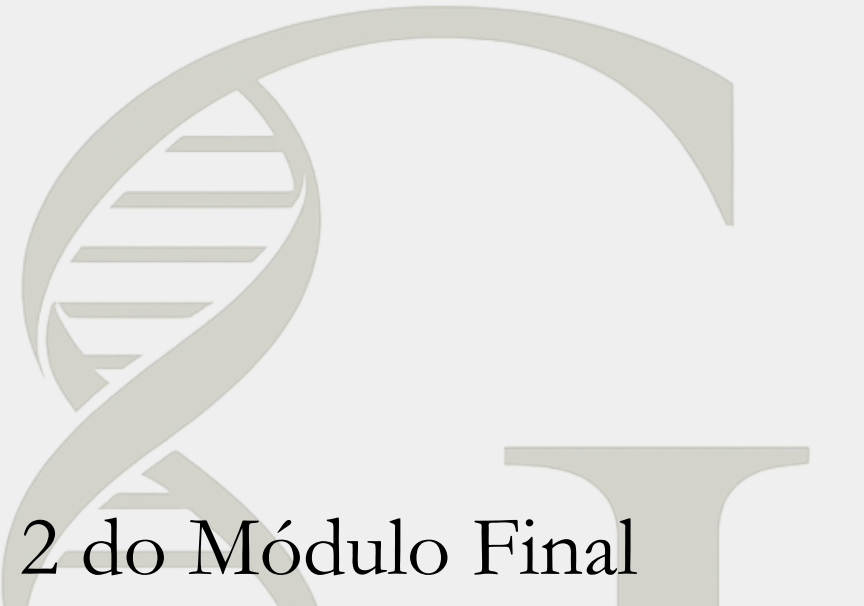
Adicione um comentário...



Em Roma, especialmente nas áreas históricas, não se pode simplesmente pintar uma casa com qualquer cor. A cidade preserva uma **palheta cromática tradicional**, regulamentada por normas urbanísticas e patrimoniais, buscando manter a harmonia estética, histórica e cultural da paisagem urbana (identidade).

E você? Qual a sua **percepção** do meio que lhe cerca?

O GeneFood nasceu para tornar isso visível, mostrando que transformar o ambiente é também transformar a biologia humana.



Assista a seguir a Aula 2 do Módulo Final

O antes e o depois epigenético visual

Declaração de ausência de conflitos de interesse

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