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To skin
Repair &
hair
Growth

Inflammation = Skin Aging & Hair Loss

Inflammation

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Perspectives

The Inflammatory Aspect of Male and Female Pattern Hair Loss

Nadia Peyravian, Sapna Deo, Sylvia Daunert & Joaquin J Jimenez

Pages 879-881 | Published online: 05 Oct 2022

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Abstract

data. Comparable results suggest the presence of significant perifollicular inflammatory infiltrates, such as lymphocytes and histiocytes, as well as the involvement of inflammatory genes, such as *CASP7* and *TNF*, in the presentation of MPHL and FPHL. Resurfacing of the inflammatory aspect in MPHL and FPHL pathogenesis will advance future developments in MPHL and FPHL therapeutic options.

Keywords: hair loss | inflammation | male pattern baldness | female pattern baldness

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Introduction

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Article | Open Access | Published: 30 July 2018

Inhibition of glycosphingolipid synthesis reverses skin inflammation and hair loss in ApoE−/− mice fed western diet

Djahida Bedja, Wenwen Yan, Viren Lad, Domenica Iocco, Nickash Sivakumar, Veera Venkata Ratnam Bandaru & Subroto Chatterjee

Scientific Reports **8**, Article number: 11463 (2018) | Cite this article

8922 Accesses | **15** Citations | **694** Altmetric | Metrics

Abstract

Sphingolipids have been accorded numerous biological functions however, the effects of feeding a western diet (diet rich in cholesterol and fat) on skin phenotypes, and color is not known. Here, we observed that chronic high-fat and high-cholesterol diet intake in a mouse model of atherosclerosis (ApoE−/−) decreases the level of ceramides and glucosylceramide. at the expense of increased levels of lactosylceramide due to an increase in the expression of ctosylceramide synthase (GalT-V). This is accompanied with neutrophil infiltration into ermis, and enrichment of tumor necrosis factor-stimulated gene-6 (TSG-6) protein. This causes skin inflammation, hair discoloration and loss, in ApoE−/− mice. Conversely, inhibition of glycosphingolipid synthesis, by D-threo-1-phenyl-2-decanoylamino-3-morpholino-1-propanol (D-PDMP), unbound or encapsulated in a biodegradable polymer (BPD) reversed these phenotypes. Thus, inhibition of glycosphingolipid synthesis represents a unique therapeutic approach relevant to human skin and hair Biology.

Introduction

Glycosphingolipids (GSLs) are integral components of all cell membranes, and affect numerous biological functions[1]. Glycosphingolipids are synthesized by the sequential transfer of monosaccharides such as glucose, from the nucleotide sugar, UDP-glucose, to ceramide to form glucosylceramide (GlcCer)[2]. Analogously, the subsequent transfer of galactose from

Several reports of escalated inflammation following radiofrequency procedures. Radiofrequency could be replacing pre-existing inflammation inherent in the hair loss process with radiofrequency induced inflammation.

Franco, W., Kothare, A. and Goldberg, D.J., (2009). Controlled volumetric heating of subcutaneous adipose tissue using a novel radiofrequency technology. *Lasers in Surgery and Medicine: The Official Journal of the American Society for Laser Medicine and Surgery*, *41*(10), pp.745-750. https://doi.org/10.1002/lsm.20876

Franco, W., Kothare, A., Ronan, S.J., Grekin, R.C. and McCalmont, T.H., (2010). Hyperthermic injury to adipocyte cells by selective heating of subcutaneous fat with a novel radiofrequency device: feasibility studies. *Lasers in surgery and medicine*, *42*(5), pp.361-370. https://doi.org/10.1002/lsm.20925

del Pino Emilia, M., Rosado, R.H., Azuela, A., Graciela, M.G., Argüelles, D., Rodríguez, C. and Rosado, G.M., (2006). Effect of controlled volumetric tissue heating with radiofrequency on cellulite and the subcutaneous tissue of the buttocks and thighs. *Journal of drugs in dermatology: JDD*, *5*(8), pp.714-722. PMID: 16989185

Paul, M. and Mulholland, R.S., (2009). A new approach for adipose tissue treatment and body contouring using radiofrequency-assisted liposuction. *Aesthetic plastic surgery*, *33*(5), pp.687-694. DOI 10.1007/s00266-009-9342-z

Kapoor, R., Shome, D. and Ranjan, A., (2017). Use of a novel combined radiofrequency and ultrasound device for lipolysis, skin tightening and cellulite treatment. *Journal of Cosmetic and Laser Therapy*, *19*(5), pp.266-274. https://doi.org/10.1080/14764172.2017.1303169

Review

December 9, 2021

Radiofrequency Radiation and Cancer
A Review

David Robert Grimes, PhD[1,2]

» Author Affiliations

JAMA Oncol. 2022;8(3):456-461. doi:10.1001/jamaoncol.2021.5964

Abstract

Importance Concerns over radiofrequency radiation (RFR) and carcinogenesis have long existed, and the advent

Lasers in Surgery and Medicine

Basic Paper | Free Access

Low-level laser (light) therapy (LLLT) for treatment of hair loss

Pinar Avci MD, Gaurav K. Gupta MD, PhD, Jason Clark MD, Norbert Wikonkal MD, PhD, Michael R. Hamblin PhD

First published: 23 August 2013 | https://doi.org/10.1002/lsm.22170 | Citations: 116

Conflict of Interest Disclosures: All authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Michael R. Hamblin is on the scientific advisory board and holds stock in Transdermal Cap Inc. He has been on the scientific advisory board and has received sponsored research funding from Lexington Int. He has been an expert witness for Advanced Hair Studio Australia. Other authors reported no conflict of interest.

Abstract

Objective

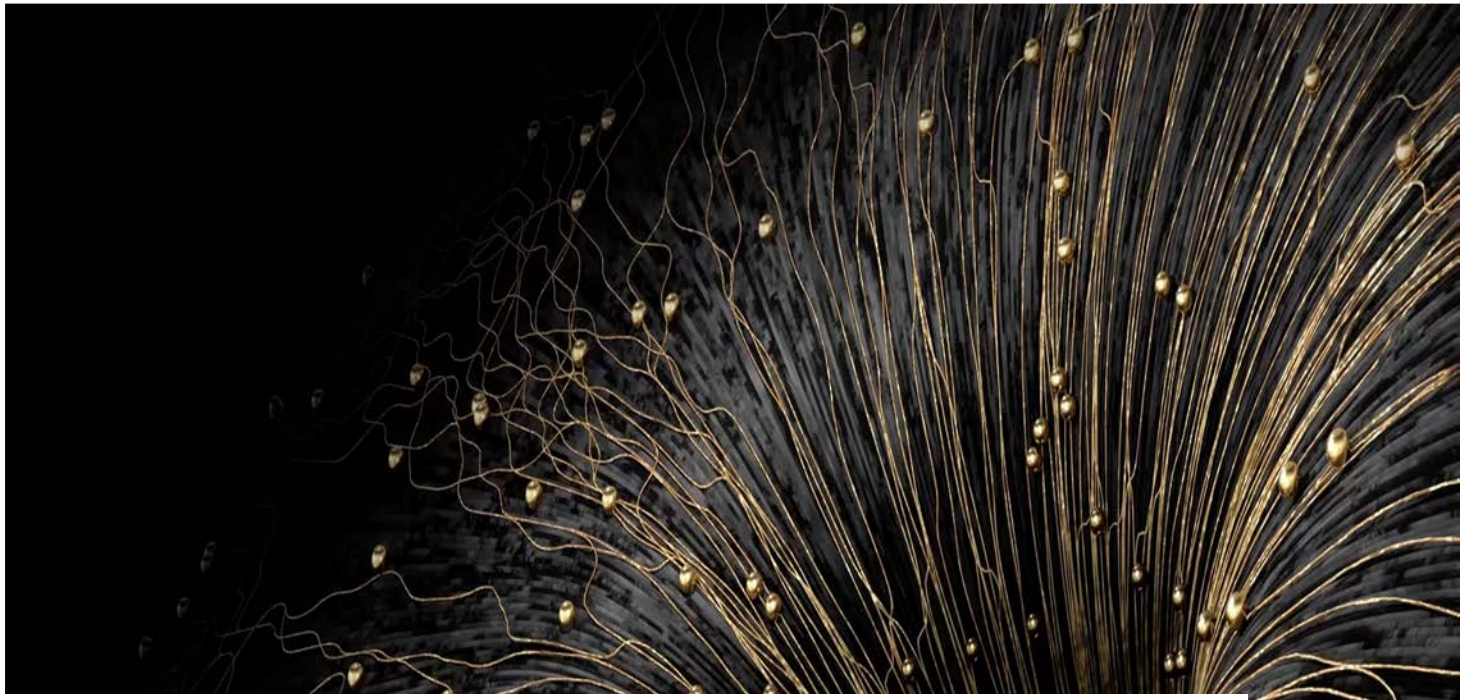
Alopecia is a common disorder affecting more than half of the population worldwide. Androgenetic alopecia, the most common type, affects 50% of males over the age of 40 and 75% of females over 65. Only two drugs have been approved so far (minoxidil and finasteride) and hair transplant is the other treatment alternative. This review surveys the evidence for low-level laser therapy (LLLT) applied to the scalp as a treatment for hair loss and discusses possible mechanisms of actions.

Methods and Materials

Searches of PubMed and Google Scholar were carried out using keywords alopecia, hair loss, LLLT, photobiomodulation.

Results

Studies have shown that LLLT stimulated hair growth in mice subjected to chemotherapy-induced alopecia and also in alopecia areata. Controlled clinical trials demonstrated that LLLT stimulated hair growth in both men and women. Among various mechanisms, the main mechanism is hypothesized to be stimulation of epidermal stem cells in the hair follicle bulge and shifting the follicles into anagen phase.



1. Authors Conflict of interests. Financed and part of HairMax
2. Animal model / no statistical significance

*** Always check the conflict of interests part in clinical studies

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Results are after 3-4 treatments before and three months later

What is this new generation technology and how it works?
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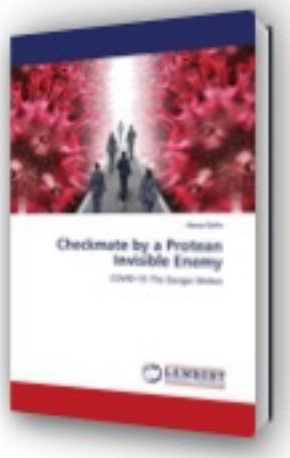

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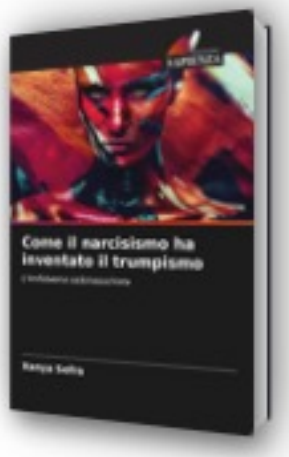

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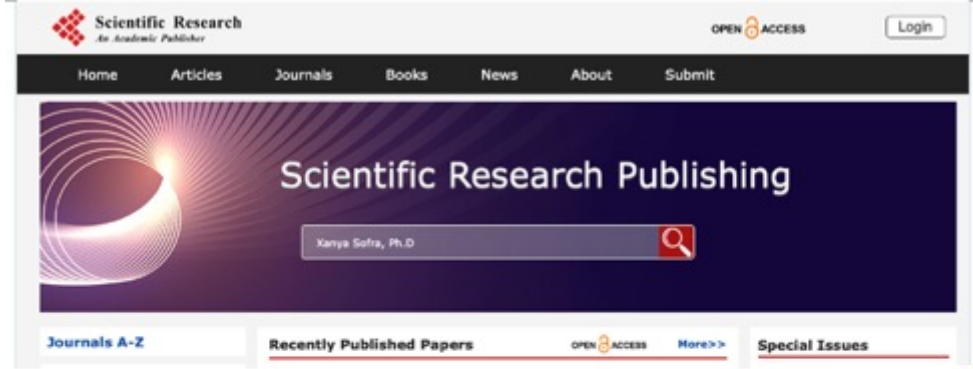

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Abstract

Journal of
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Diabetes, Metabolic Disorders & Control

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Research Article | Volume 9 Issue 1

Balancing hormones improves Type 2 diabetes

Xanya Sofra

Department of Research, New School for Social Research, New York, USA

Correspondence: Xanya Sofra, Department of Research, New School for Social Research, New York, USA, Tel +85293405069

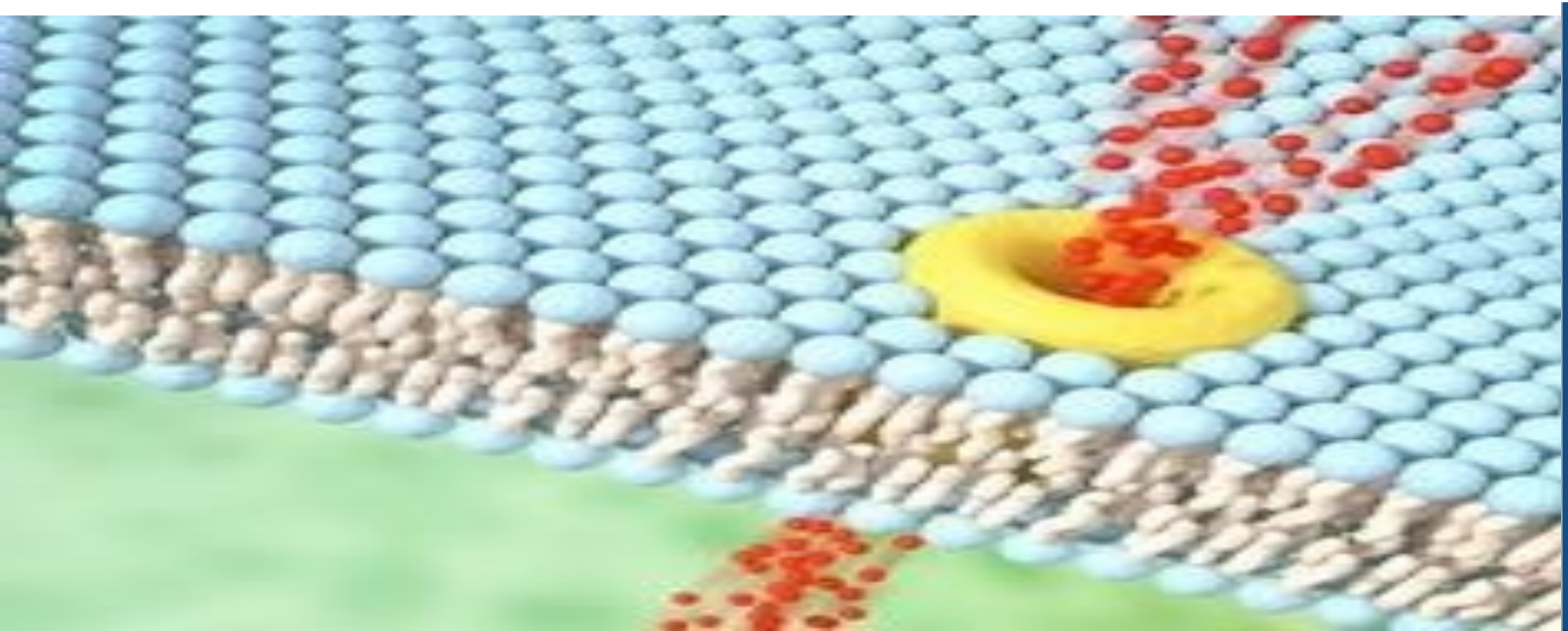
Received: August 03, 2022 | **Published:** August 17, 2022

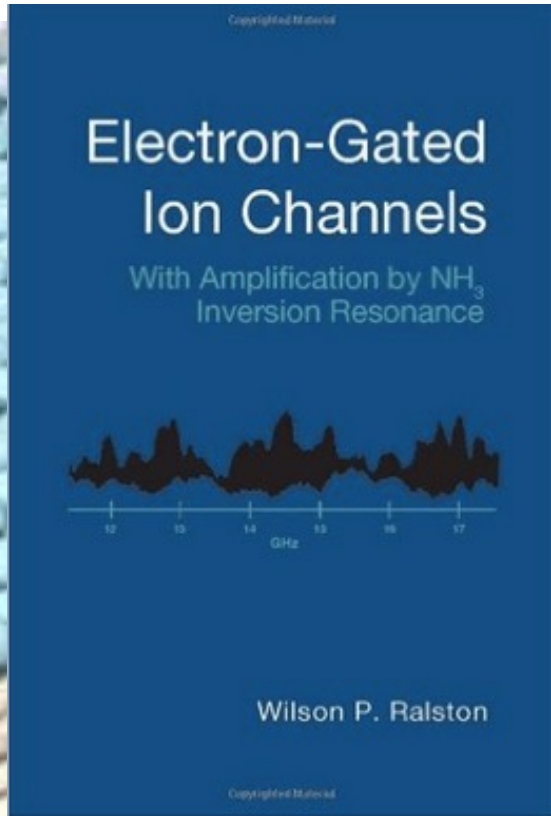
Citation: Sofra X. Balancing hormones improves Type 2 diabetes. *J Diab Metab Disorder*. 2022;9(1):16-25. DOI: 10.15406/jdmdc.2022.09.00232

SIGNALS MUST BE DELIVERED AT ULTRA LOW ENERGIES

(below thermal noise)

At very low energies in the nanorange electrons RESONATE & *amplify* the energy of Ion Channels by increasing or decreasing the height of the energy at the gating cavity in this Ion Channel





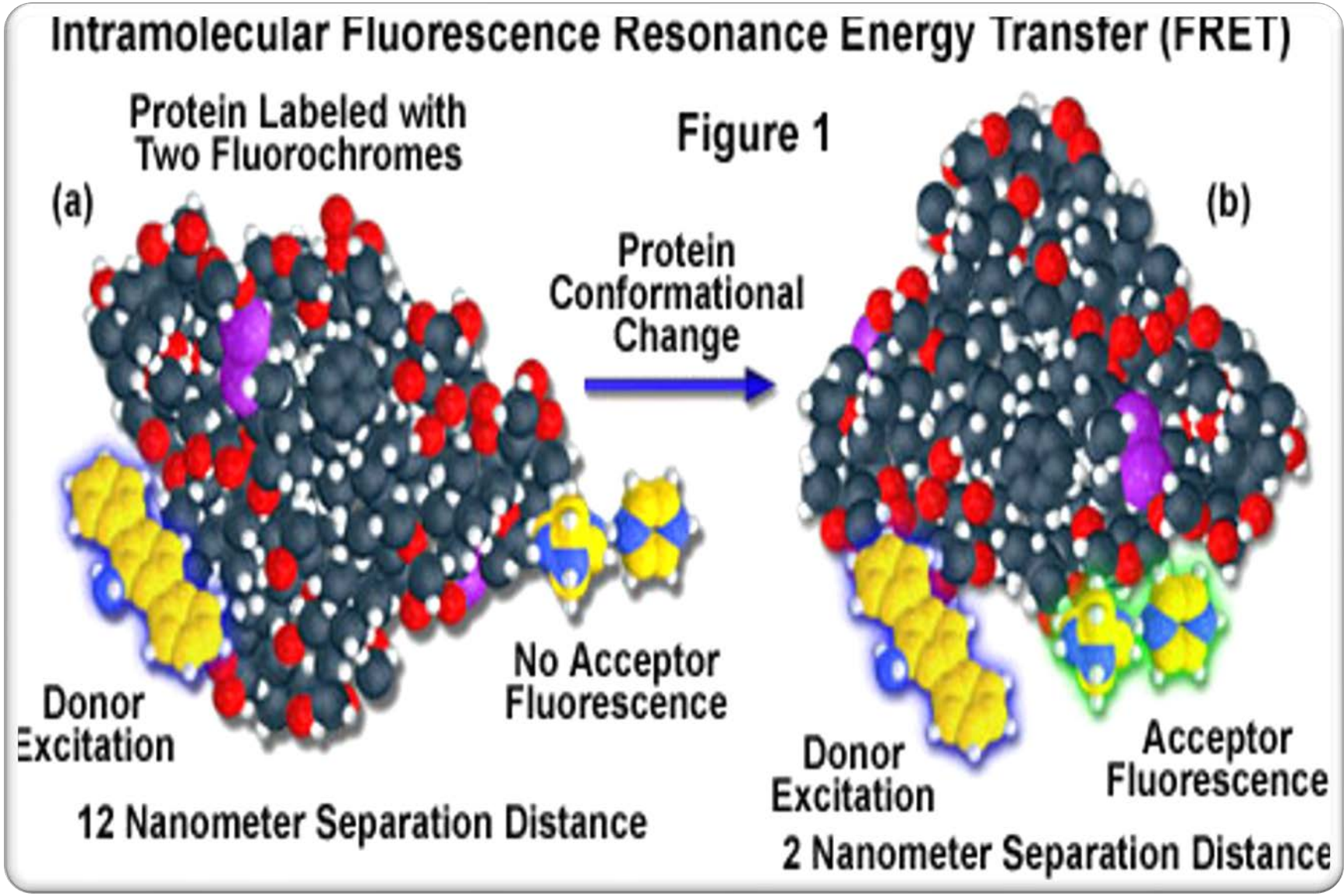
Anti-inflammatory / Anti-oxidant Tech

NEW METHOD OF SKIN HEALING

RESONANCE ENERGY TRANSFER

BETWEEN PROTEINS FOR REPAIR

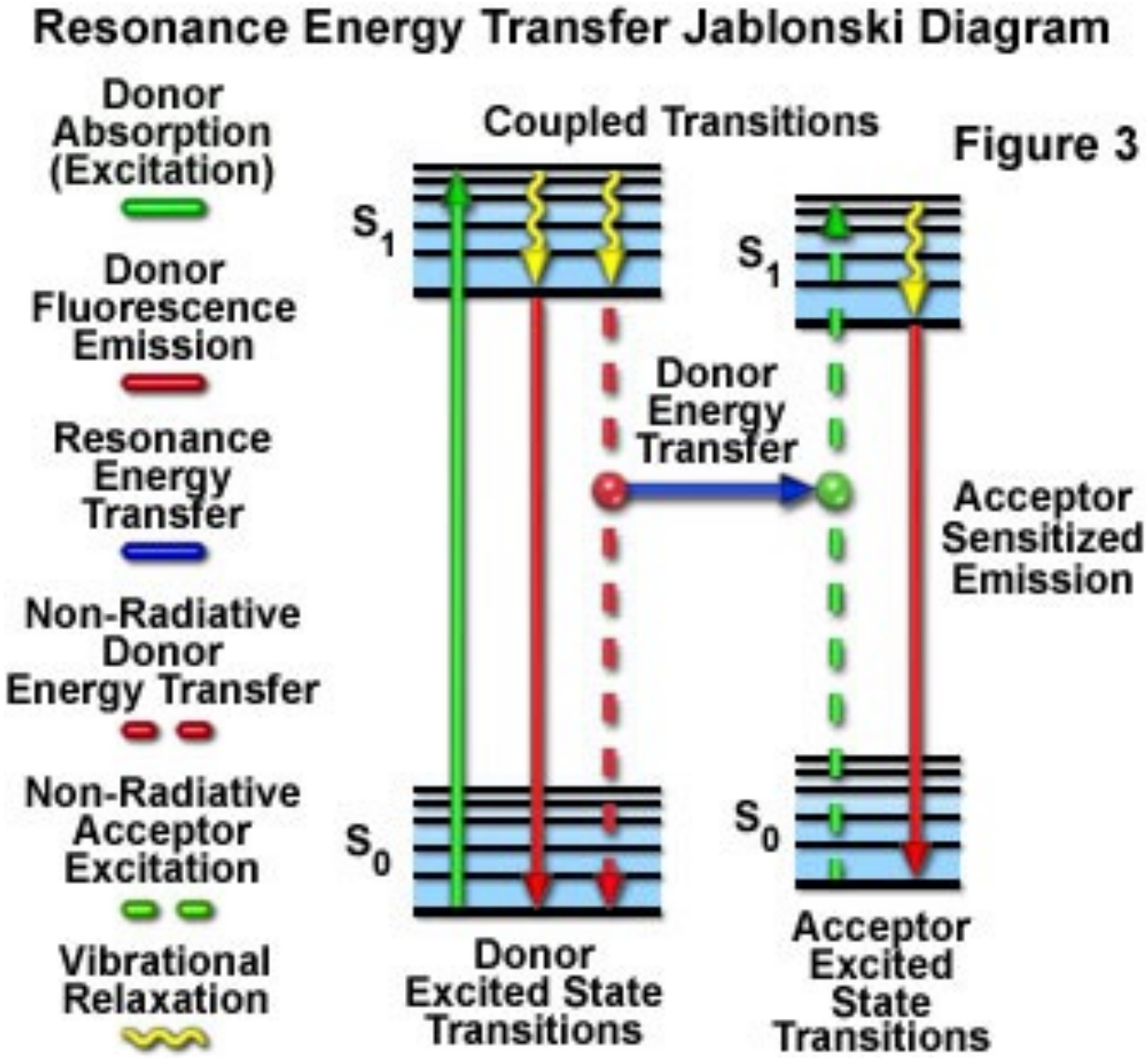
AND COMMUNICATION

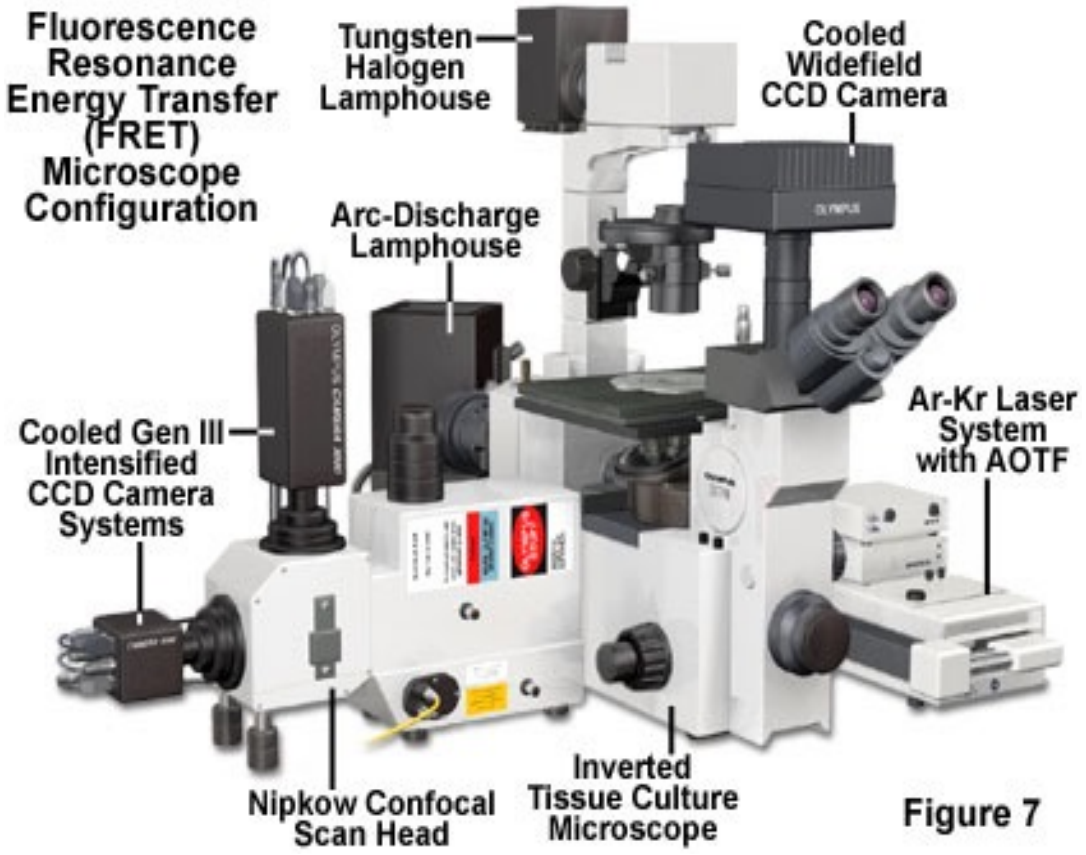


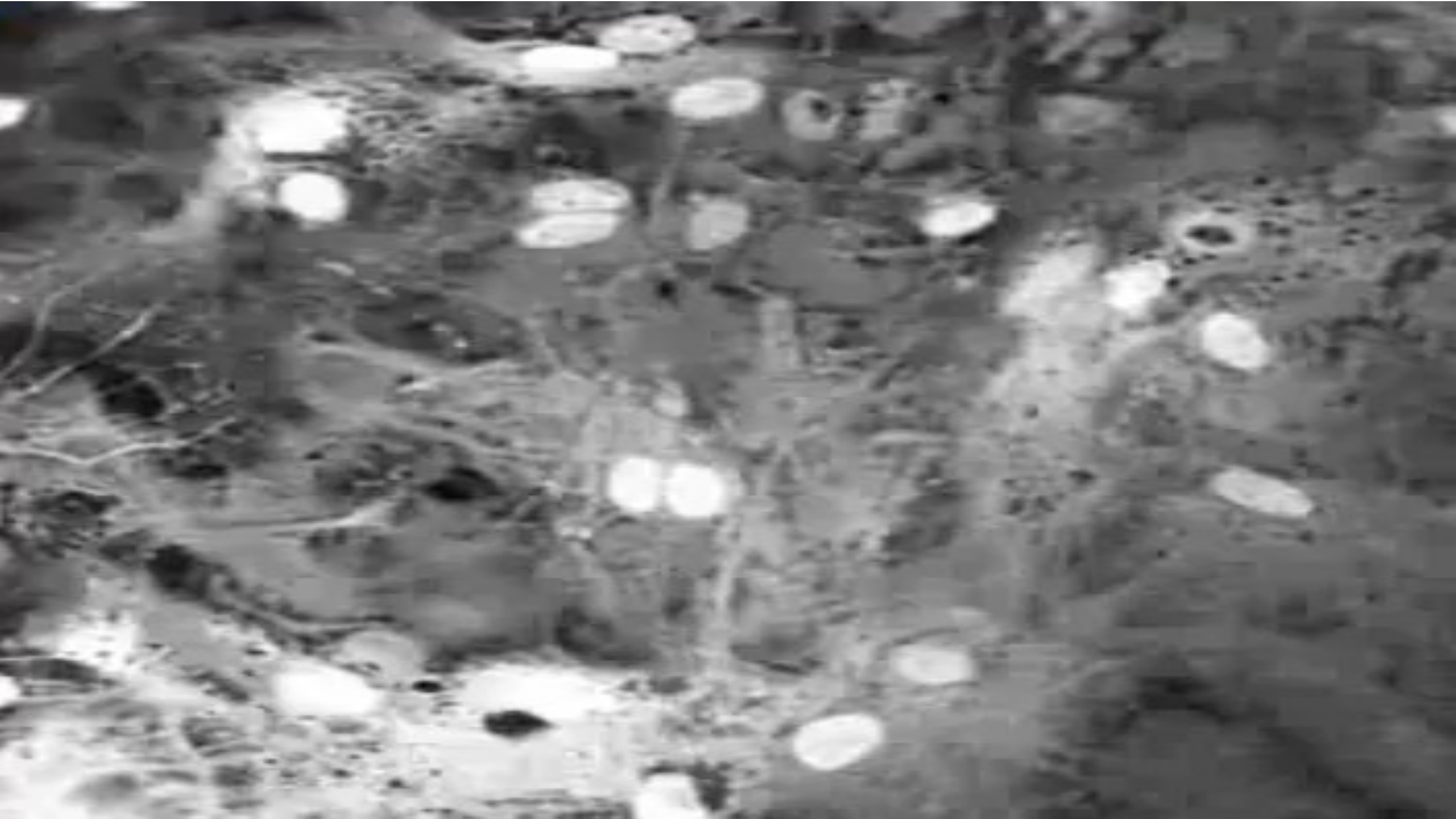
RESONANCE ENERGY TRANSFER IS

- **A NON-RADIATIVE QUANTUM MECHANICAL PROCESS**
- NO COLLISION
- NO HEAT.

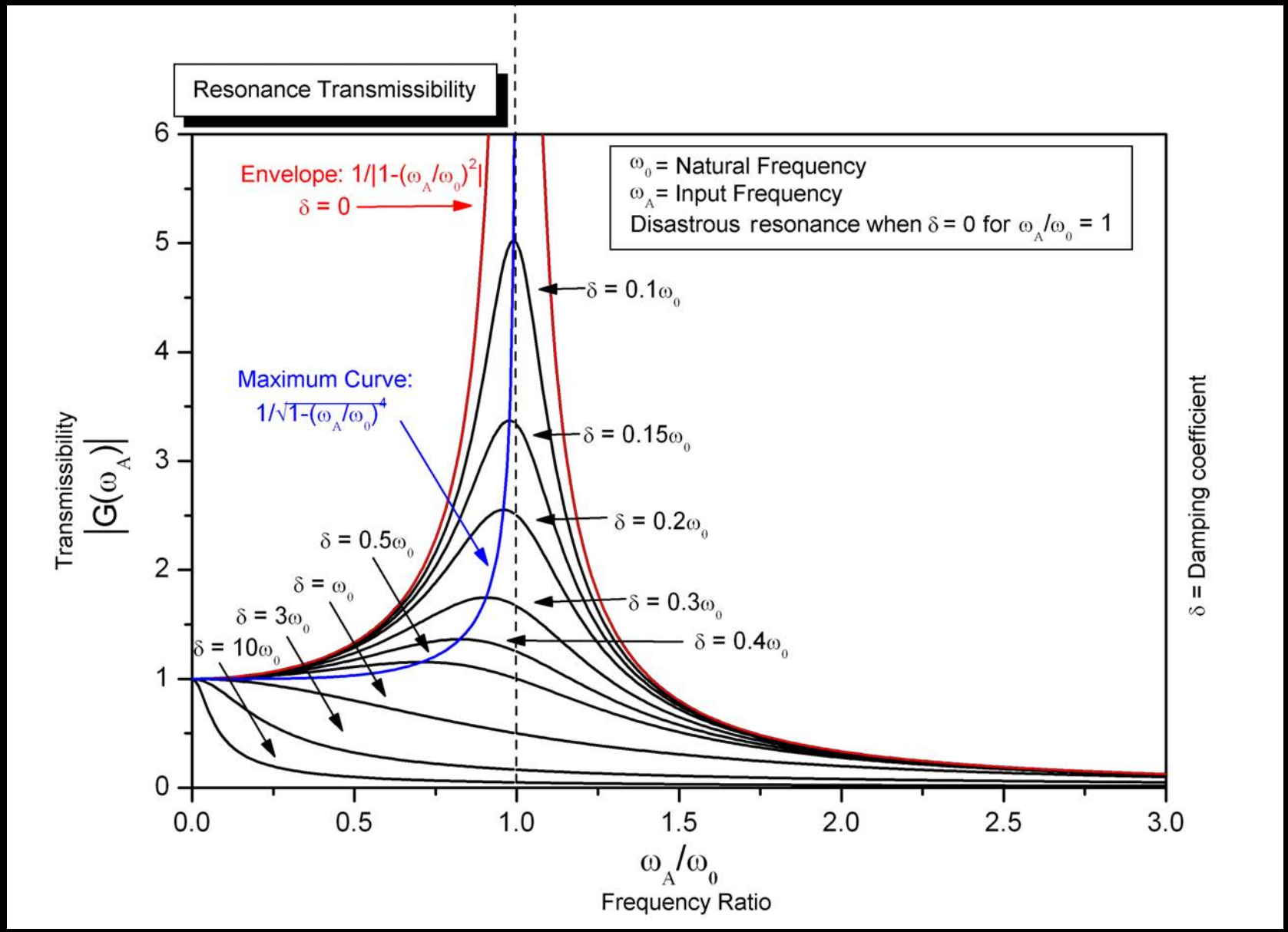
Fluorescence Resonance Energy Transferv -FRET





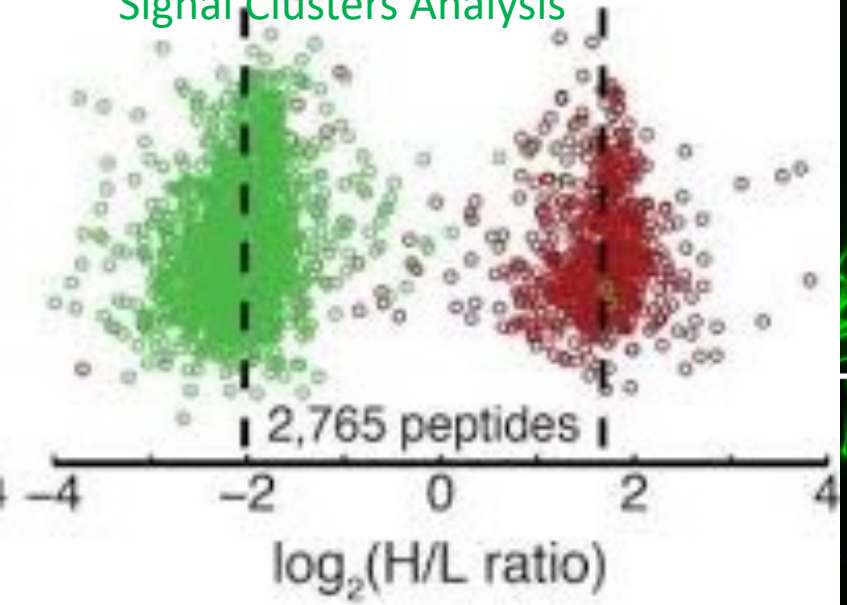


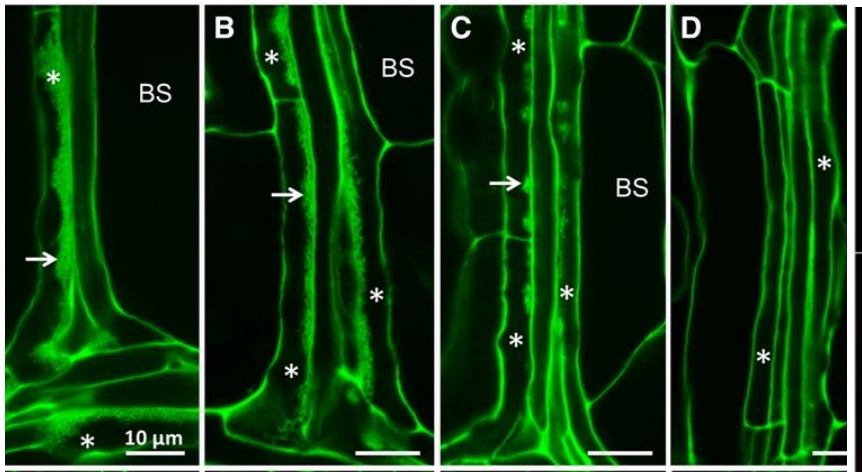
Resonance affects several aspects of the system amplifying certain processes and diminishing others depending on signaling interaction. Amplification via resonance is when a boat crosses the river, and the waves start are rising bigger and bigger. But overall resonance is mathematically very complex. The result depends on the interacting waveforms of fused signals, that range from maximum resonance amplification to zero.

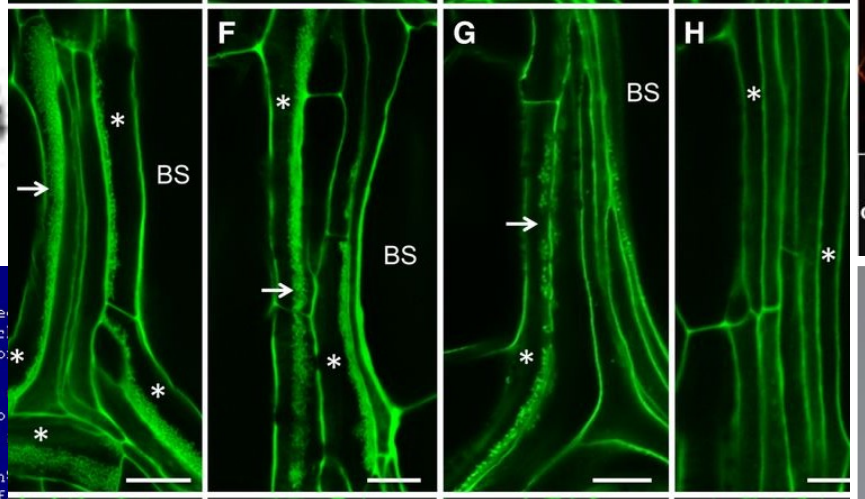


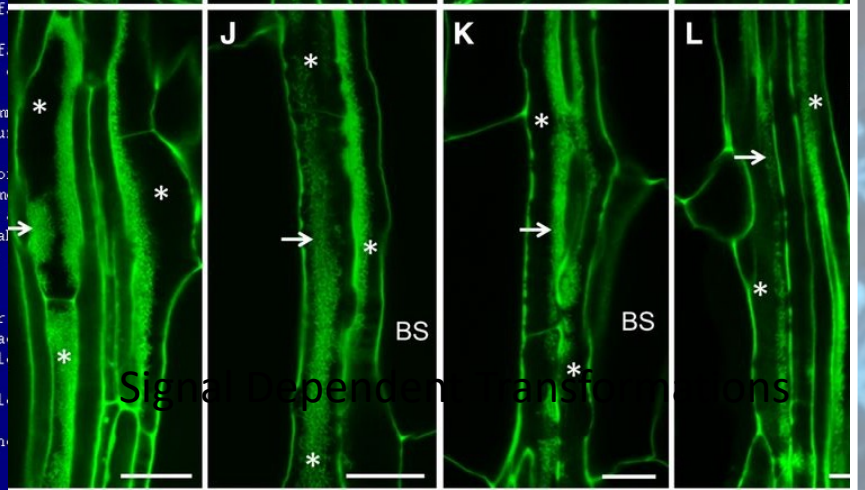
SIGNAL PROCESSING BLUEPRINTS

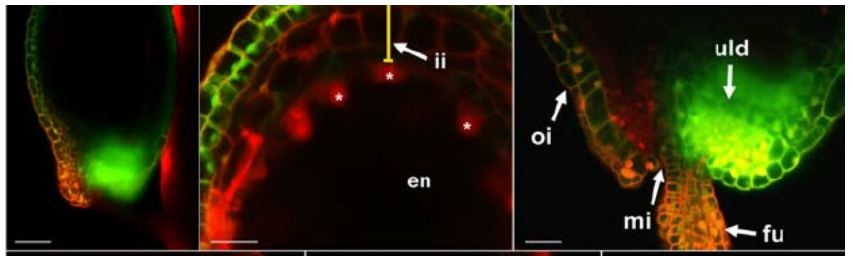
Signal Clusters Analysis

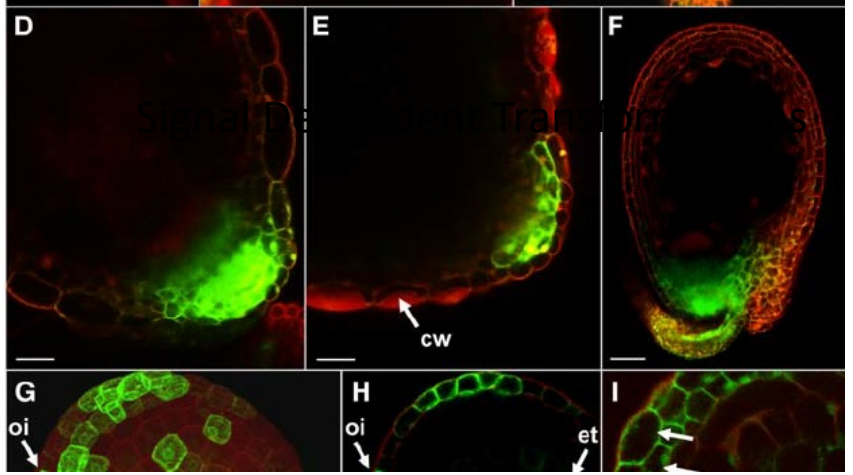












SIGNALS ARE COMPOSED BY COMPLEX WAVEFORM CONSTRUCTS

How ‘unboiling an egg’ leads to better cancer treatments

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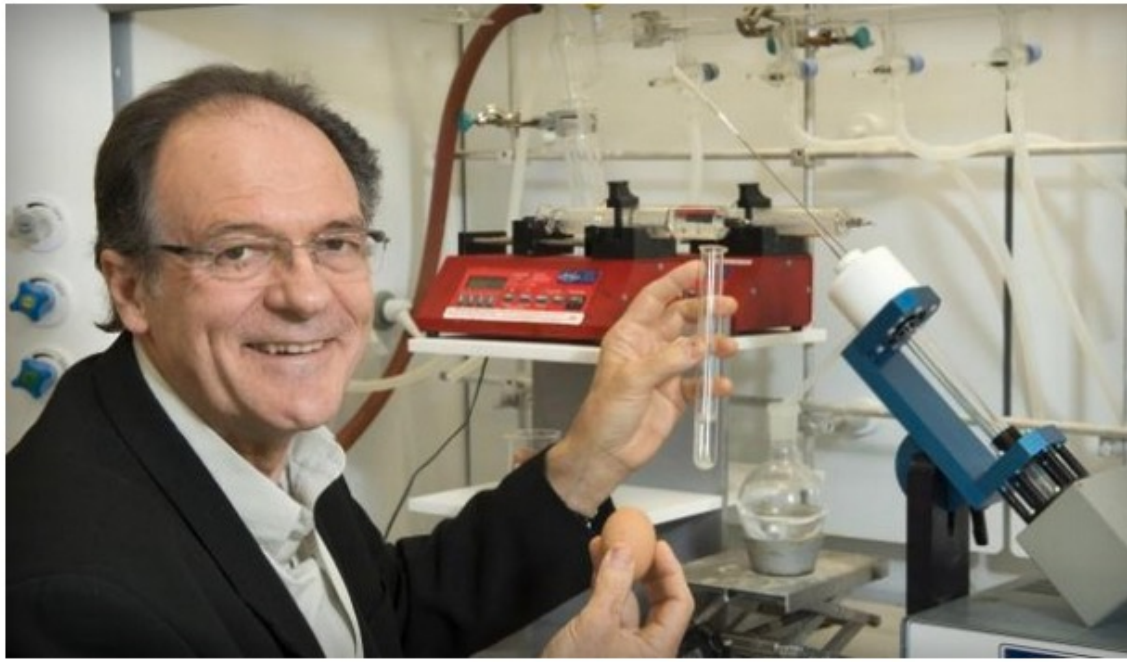

The Nobel Prize in Chemistry 2015
Tomas Lindahl, Paul Modrich, Aziz Sancar

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Press Release

7 October 2015

The Royal Swedish Academy of Sciences has decided to award the Nobel Prize in Chemistry for 2015 to

Tomas Lindahl
Francis Crick Institute and Clare Hall Laboratory, Hertfordshire, UK

Paul Modrich
Howard Hughes Medical Institute and Duke University School of Medicine, Durham, NC, USA

and

Aziz Sancar
University of North Carolina, Chapel Hill, NC, USA

“for mechanistic studies of DNA repair”

The cells’ toolbox for DNA repair

The Nobel Prize in Chemistry 2015 is awarded to **Tomas Lindahl**, **Paul Modrich** and **Aziz Sancar** for having mapped, at a molecular level, how cells repair damaged DNA and safeguard the genetic information. Their work has provided fundamental knowledge of how a living cell functions and is, for instance, used for the development of new cancer treatments.

YOU CAN UNBOIL AN EGG BY REFOLDING DENATURED PROTEINS WITHIN THE CELL.

< Previous Article

Volume 79, Issue 7, p1129–1132, 30 December 1994

Minireview

Protein folding and the regulation of signaling pathways

Suzanne L. Rutherford, Charles S. Zuker

DOI: http://dx.doi.org/10.1016/0092-8674(94)90003-5

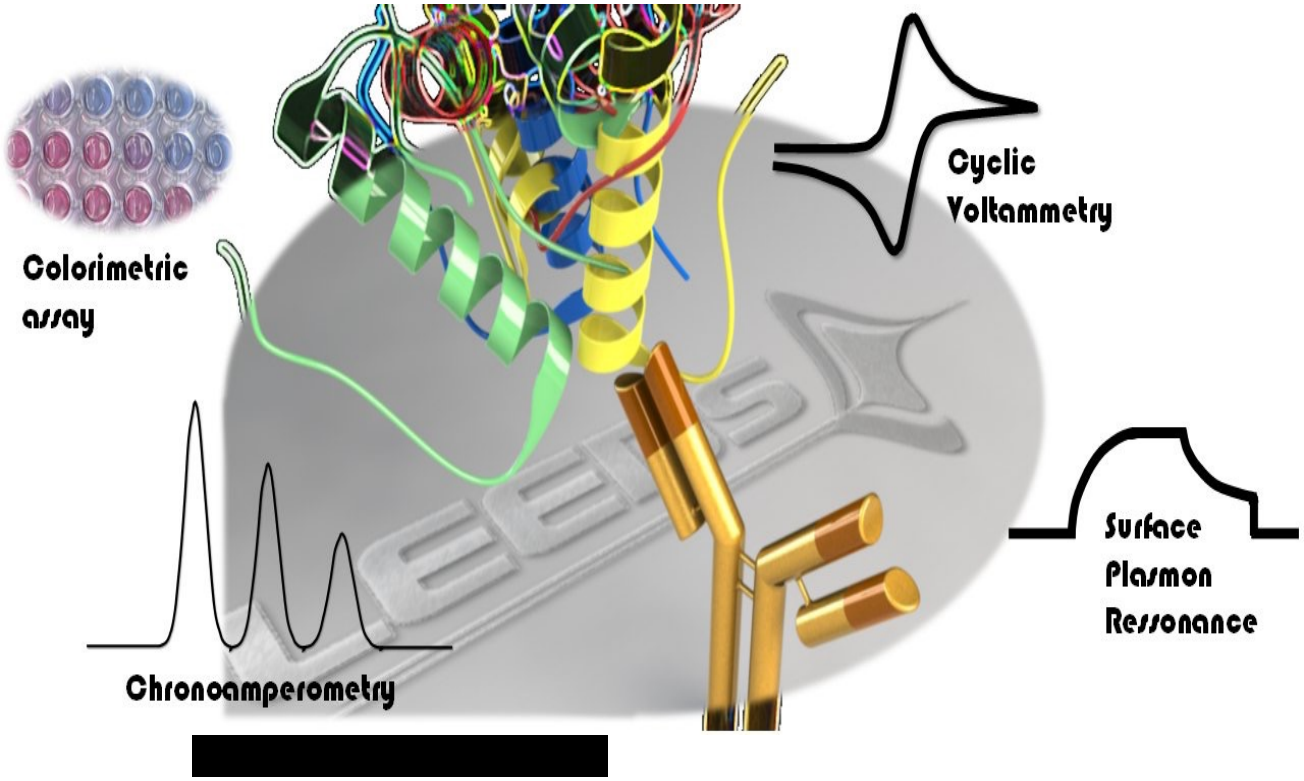
Summary References Comments

Abstract

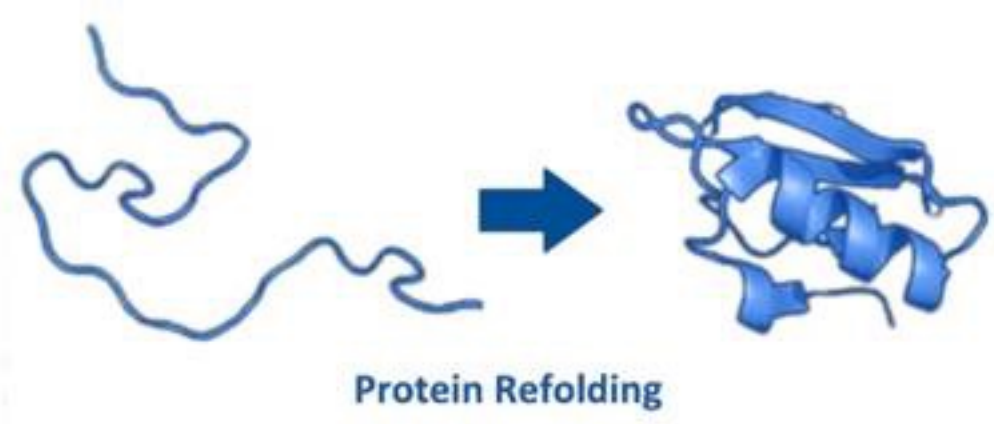
A growing number of intracellular signaling molecules are found associated with components of the cellular protein folding machinery. In this minireview we suggest that the same ancient cellular process that promotes the folding and assembly of nascent proteins plays a pivotal role in signal transduction by promoting the regulated folding or assembly and disassembly of mature signaling molecules between active and inactive states. Members of the protein folding machinery mediate the activity of various kinases, receptors, and transcription factors. These may be poised in late stages of folding or assembly until upstream signaling events trigger their biogenesis into activated molecules.

SKIN DISORDERS CAN be reversed by REFOLDING DENATURED proteins

PROTEIN REFOLDING OCCURS ROUTINELY INSIDE THE BODY UNDER THE SUPERVISION OF CHAPARONE PROTEINS.



Several scientists have succeeded in folding proteins by using surface plasmon resonance



Singh et al (Journal of Bioscience and Bioengineering Volume 99, Issue 4, April 2005 pages 303-310)

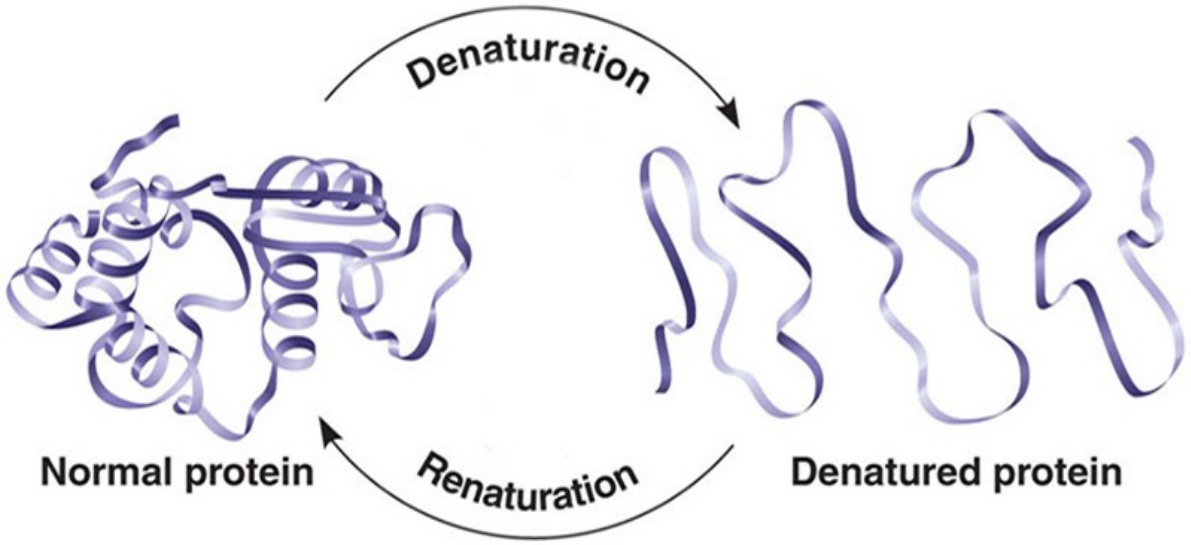
Measurement TEST

Second virial coefficient (SVC) measurements

* -VE SVC - **Protein aggregation INCREASES**

* +VE SVC **Protein aggregation DECREASES**

Protein Refolding Successful

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1st treatment Left Side

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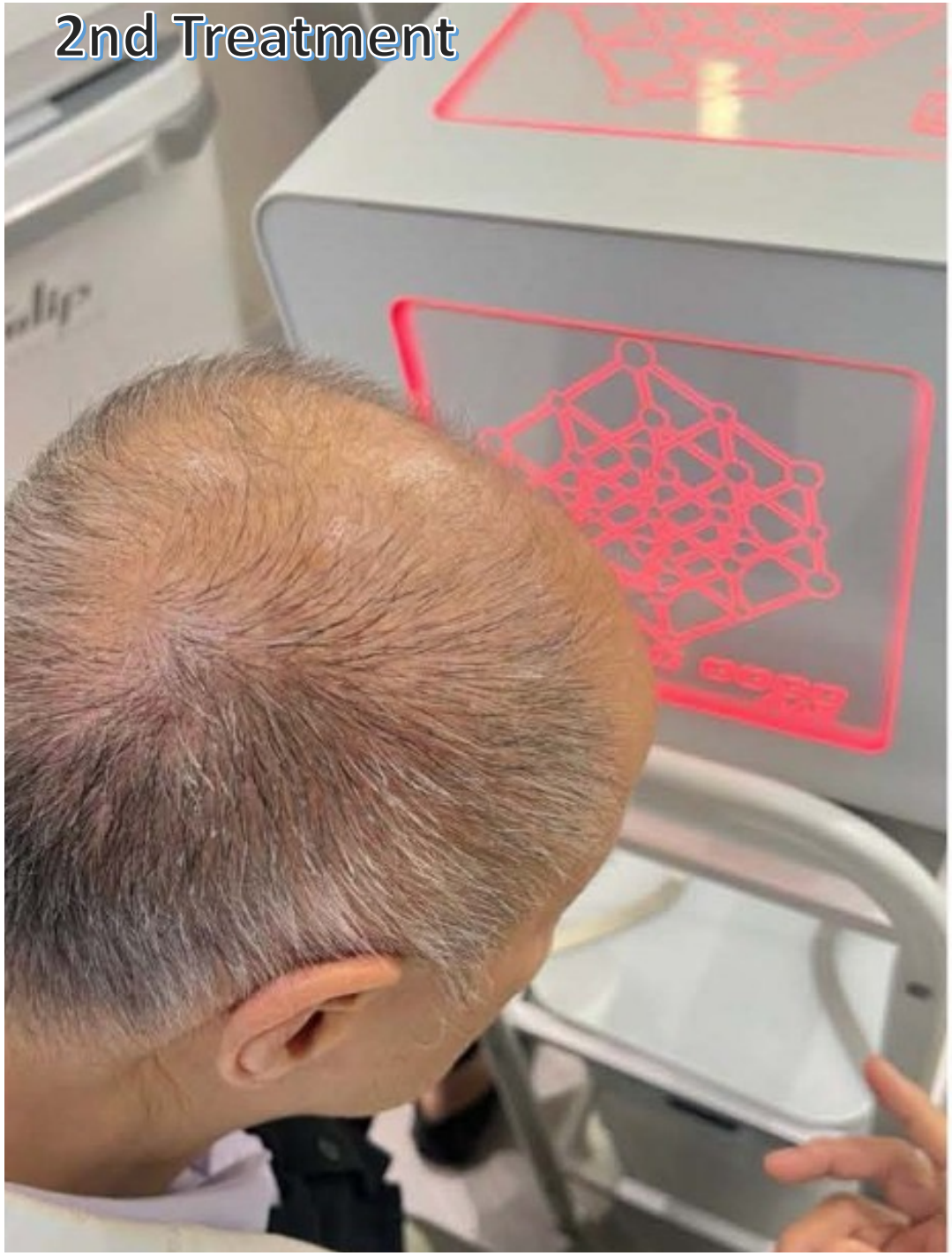
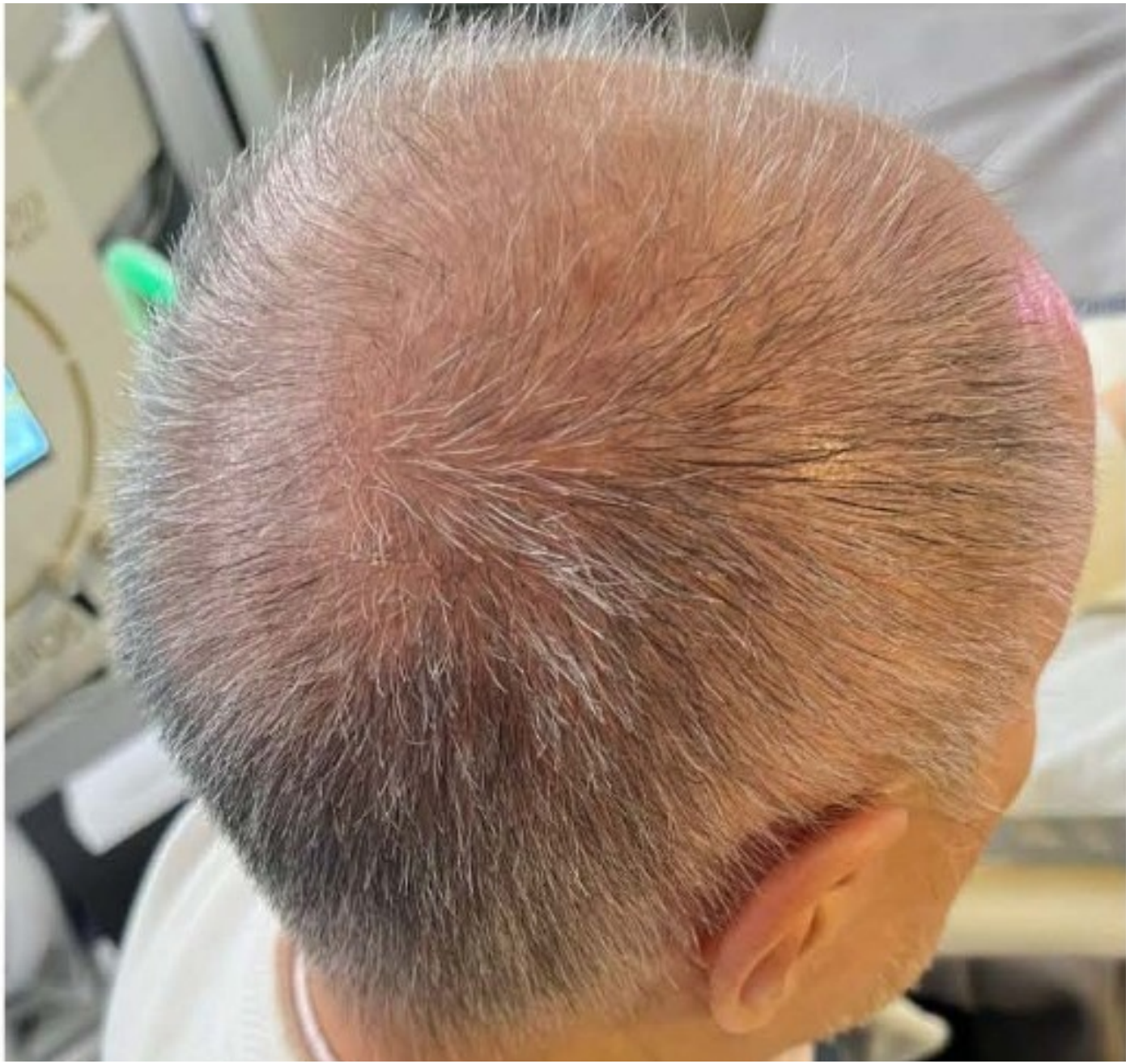
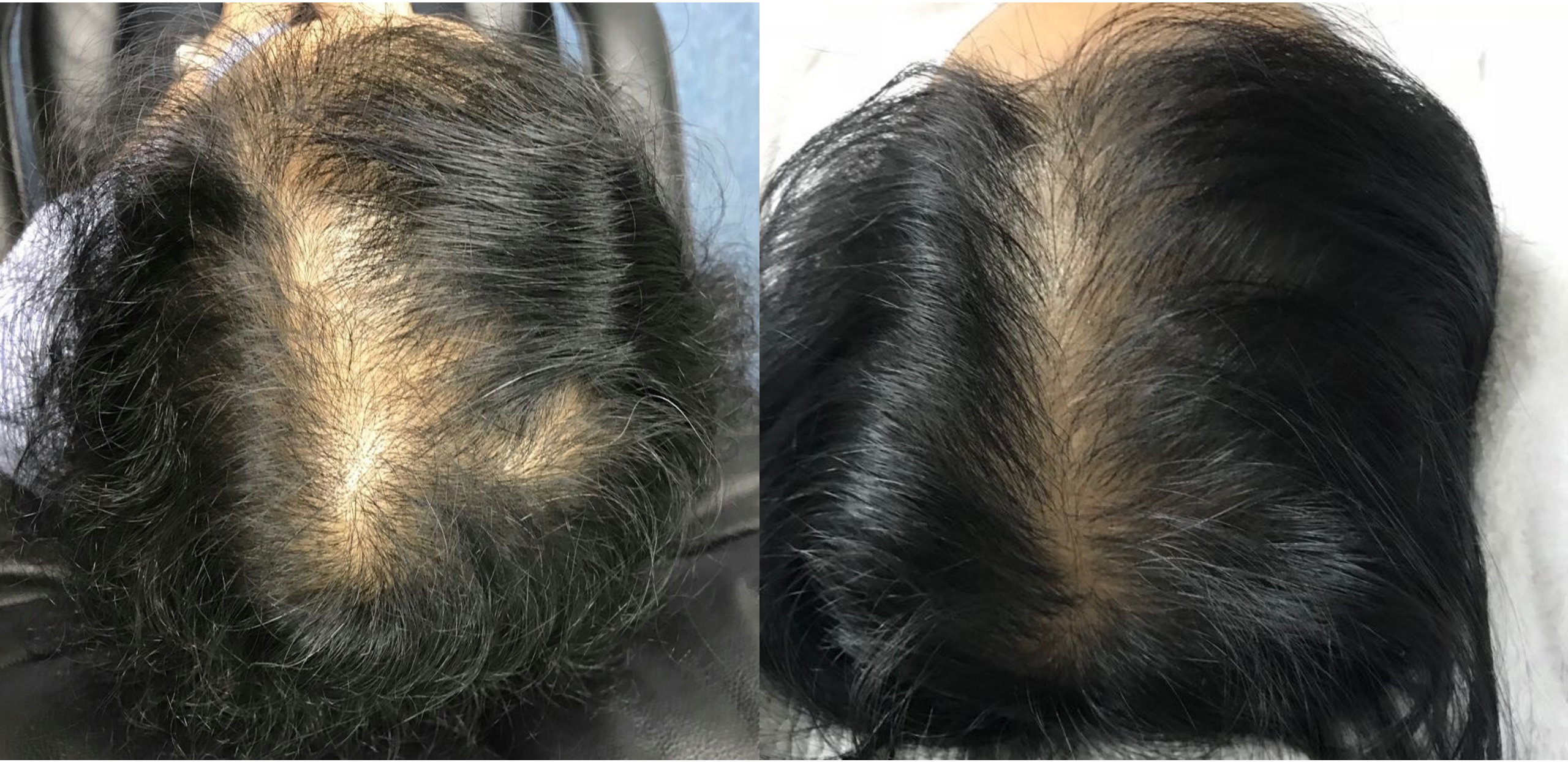


3rd Treatment



4rth Treatment

Clinical Studies on Hair Growth.




After

Before

After


BEFORE


AFTER

Persistent Inflammation underlies Abnormal Skin Healing

1. Inflammation is present in adult but not embryonic wounds that heal without a scar

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Philos Trans R Soc Lond B Biol Sci. 2004 May 29; 359(1445): 777–784. PMCID: PMC1693361
doi: 10.1098/rstb.2004.1466 PMID: 15293805

Wound healing and inflammation: embryos reveal the way to perfect repair.

Michael J Redd, Lisa Cooper, Will Wood, Brian Stramer, and Paul Martin

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ABSTRACT

Tissue repair in embryos is rapid, efficient and perfect and does not leave a scar, an ability that is lost as development proceeds. Whereas adult wound keratinocytes crawl forwards over the exposed substratum to close the gap, a wound in the embryonic epidermis is closed by contraction of a rapidly assembled actin purse string. Blocking assembly of this cable in chick and mouse embryos, by drugs or by inactivation of the small GTPase Rho, severely hinders the re-epithelialization process. Live studies of epithelial repair in GFP-actin-expressing Drosophila embryos reveal actin-rich filopodia associated with the cable, and although these protrusions from leading edge cells appear to play little role in epithelial migration, they are essential for final zippering of the wound edges together-inactivation of Cdc42 prevents their assembly and blocks the final adhesion step. This wound re-epithelialization machinery appears to recapitulate that used during naturally occurring morphogenetic episodes as typified by Drosophila dorsal closure. One key difference between embryonic and adult repair, which may explain why one heals perfectly and the other scars, is the presence of an inflammatory response at sites of adult repair where there is none in the embryo. Our studies of repair in the PU. 1 null mouse, which is genetically incapable of raising an inflammatory response, show that inflammation may indeed be partly responsible for scarring, and our genetic studies of inflammation in zebrafish (Danio rerio) larvae suggest routes to identifying gene targets for therapeutically modulating the recruitment of inflammatory cells and thus improving adult healing.

Depletion of one or more of the inflammatory cell lineages enhance wound healing

Review Trends Cell Biol. 2005 Nov;15(11):599-607. doi: 10.1016/j.tcb.2005.09.002.
Epub 2005 Oct 3.

Inflammatory cells during wound repair: the good, the bad and the ugly

Paul Martin [1], S Joseph Leibovich

Affiliations + expand

PMID: 16202600 DOI: 10.1016/j.tcb.2005.09.002

Abstract

Damage to any tissue triggers a cascade of events that leads to rapid repair of the wound - if the tissue is skin, then repair involves re-epithelialization, formation of granulation tissue and contraction of underlying wound connective tissues. This concerted effort by the wounded cell layers is accompanied by, and might also be partially regulated by, a robust inflammatory response, in which first neutrophils and then macrophages and mast cells emigrate from nearby tissues and from the circulation. Clearly, this inflammatory response is crucial for fighting infection and must have been selected for during the course of evolution so that tissue damage did not inevitably lead to death through septicemia. But, aside from this role, exactly what are the functions of the various leukocyte lineages that are recruited with overlapping time courses to the wound site, and might they do more harm than good? Recent knockout and knockdown studies suggest that depletion of one or more of the inflammatory cell lineages can even enhance healing, and we discuss new views on how regulation of the migration of inflammatory cells to sites of tissue damage might guide therapeutic strategies for modulating the inflammatory response.

Chronic, persistent inflammation is a hallmark of most chronic wounds.

Adv Skin Wound Care. Author manuscript; available in PMC 2013 Jul 1. PMCID: PMC3428147
Published in final edited form as: NIHMSID: NIHMS398678
Adv Skin Wound Care. 2012 Jul; 25(7): 304–314. PMID: 22713781
doi: 10.1097/01.ASW.0000416006.55218.d0

Acute and Impaired Wound Healing: Pathophysiology and Current Methods for Drug Delivery, Part 1: Normal and Chronic Wounds: Biology, Causes, and Approaches to Care

Tatiana N. Demidova-Rice, PhD, Michael R. Hamblin, PhD, and Ira M. Herman, PhD

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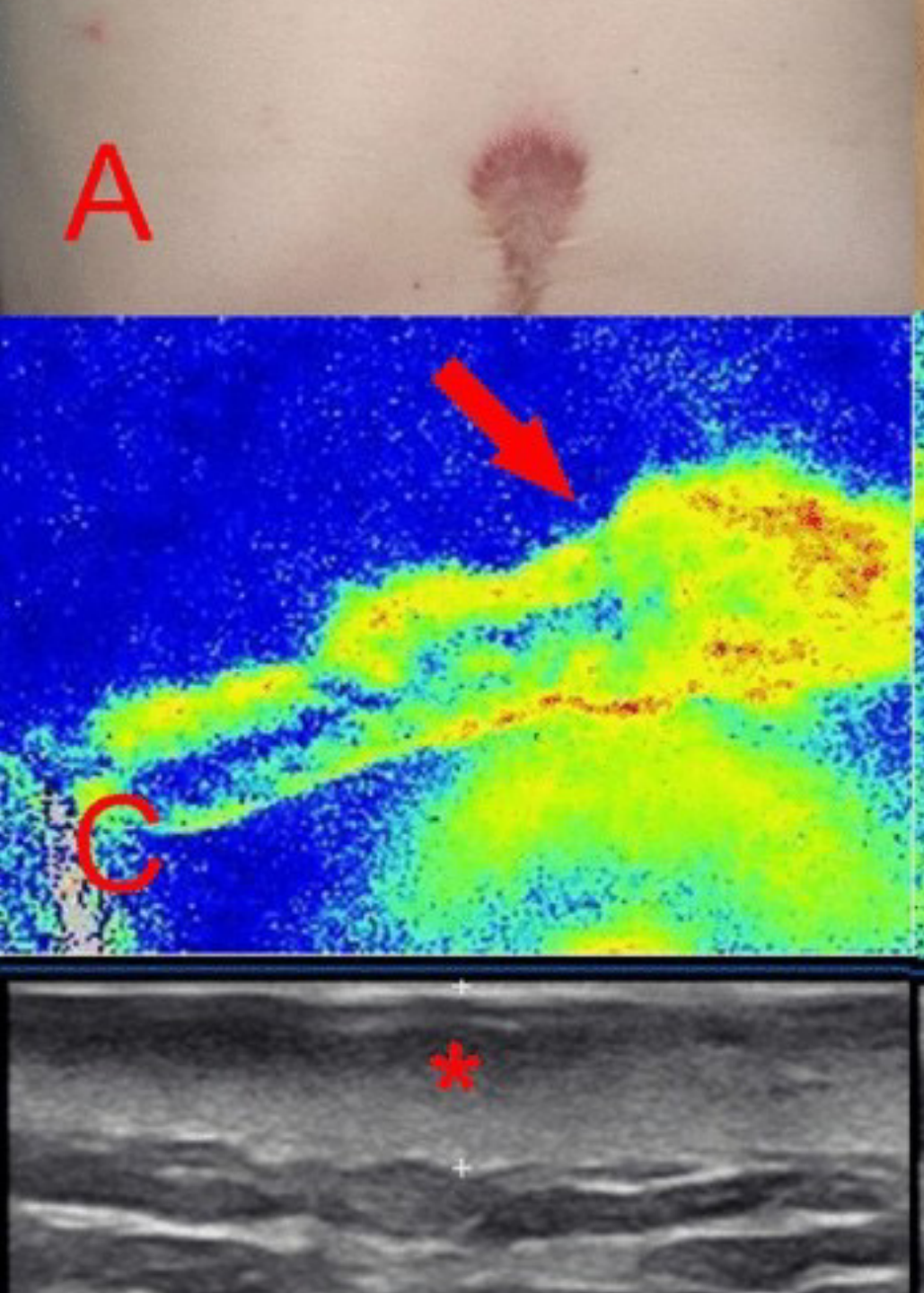
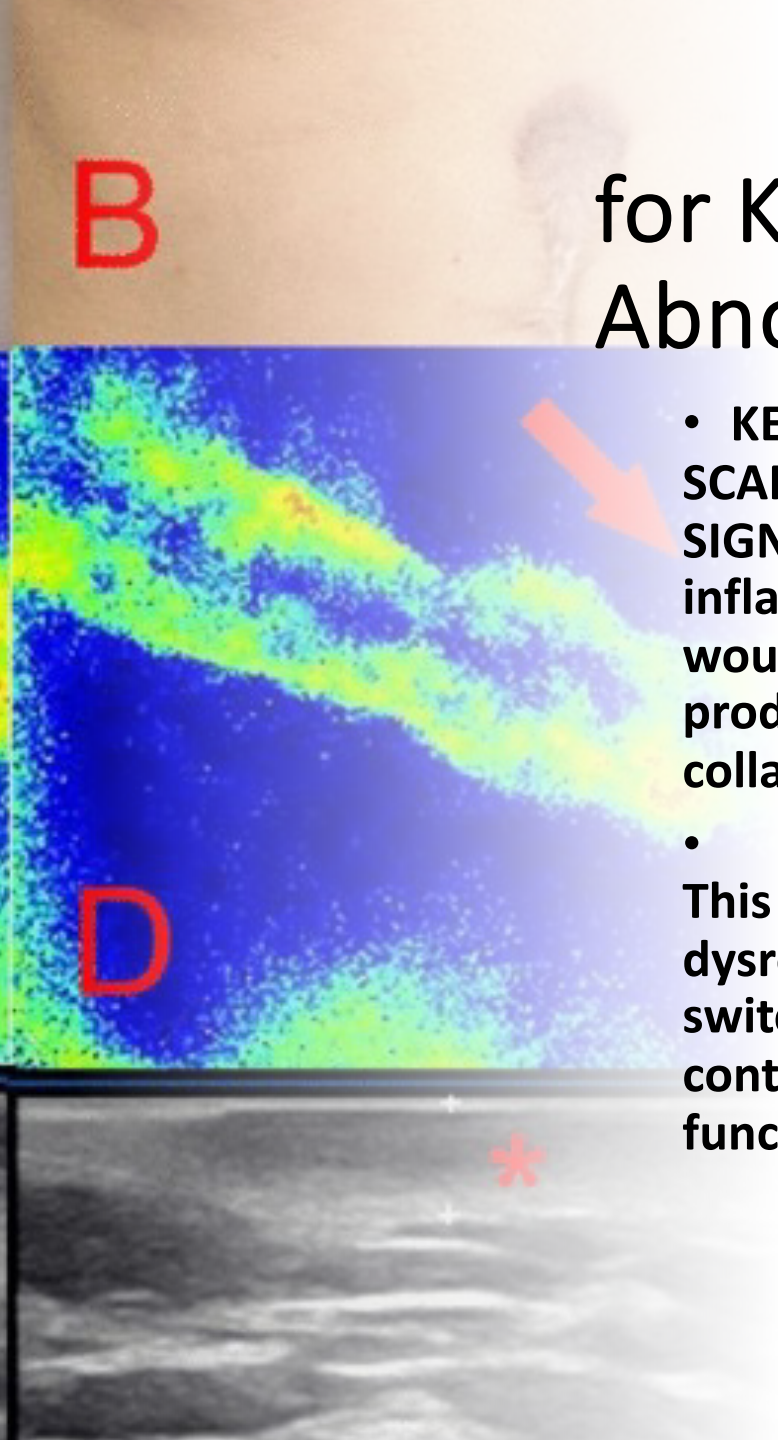
Abstract Go to:

This is the first installment of 2 articles that discuss the biology and pathophysiology of wound healing, review the role that growth factors play in this process, and describe current ways of growth factor delivery into the wound bed. Part 1 discusses the latest advances in clinicians' understanding of the control points that regulate wound healing. Importantly, biological similarities and differences between acute and chronic wounds are considered, including the signaling pathways that initiate cellular and tissue responses after injury, which may be impeded during chronic wound healing.

Keywords: acute wound healing, drug delivery and wounds, wound care strategies

Acute and chronic wounds affect millions of people in the United States and around the world. In recent decades, clinicians have gained a better understanding of the mechanisms of normal wound repair process and causes of delays in healing. This progress has led to significant improvement in the quality of life of affected patients. This article reviews the latest insights and opportunities for wound repair science and innovations in wound care.





The Reason for Keloids= Abnormal Healing

- **KELOID AND HYPERTROPHIC SCARS ARE DYSREGULATED SIGNALING as a result of inflammation and over-activity of wound fibroblasts constantly producing and depositing collagen.**
-

This ABERANT wound activity is dysregulated because it is not switched off but aimlessly continues past the point of its functionality

LASER EFFICIENCY ON WOUNDS KELOIDS AND HYPERTROPHIC SCARS

NO STATISTICAL SIGNIFICANCE

ONLY 8 OUT OF 22 (36%) SUBJECTS HAD A CLEAR REDUCTION IN THE SIZE OF THEIR LESIONS, **10** OF THESE SUBJECTS HAD A **SLIGHT** REDUCTION (45%) AND **4** (18%) SHOWED **NO CHANGE**.

Journal List › Eplasty › v.12; 2012 › PMC3258100

Open Access Journal of Plastic Surgery...
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Eplasty. 2012; 12: e1.
Published online 2012 Jan 11.

PMCID: PMC3258100
PMID: 22259645

Nd:YAG Laser Treatment of Keloids and Hypertrophic Scars

Satoshi Akaishi, MD, PhD, Sachiko Koike, MD, Teruyuki Dohi, MD, Kyoko Kobe, MD, Hiko Hyakusoku, MD, PhD, and Rei Ogawa, MD, PhD

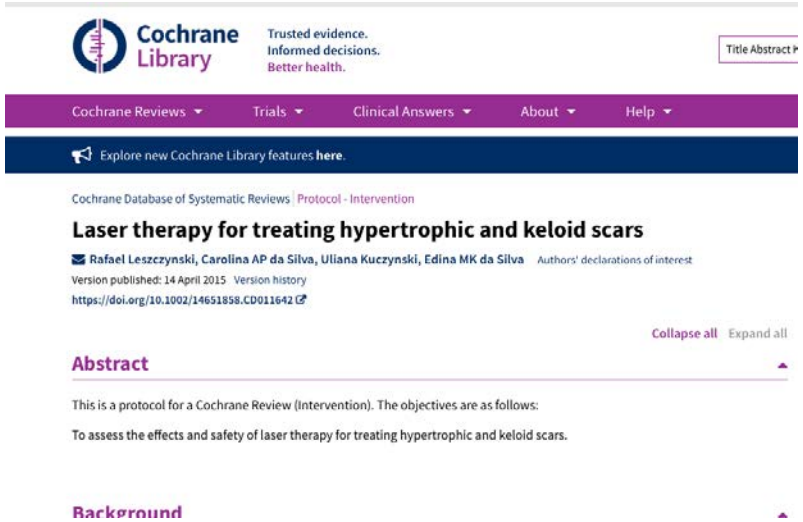
Abstract

Go to:

Pathological cutaneous scars such as keloids and hypertrophic scars (HSs) are characterized by a diffuse redness that is caused by the overgrowth of capillary vessels due to chronic inflammation. Our group has been using long-pulsed, 1064-nm Nd:YAG laser in noncontact mode with low fluence and a submillisecond pulse duration to treat keloids and hypertrophic scars since 2006 with satisfactory results. The present study examined the efficacy of this approach in 22 Japanese patients with keloids (n = 16) or hypertrophic scars (n = 6) who were treated every 3 to 4 weeks. Treatment settings were as follows: 5 mm spot size diameter; 14 J/cm^2 energy density; 300 μs exposure time per pulse; and 10 Hz repetition rate. The responses of the pathological scars to the treatment were assessed by measuring their erythema, hypertrophy, hardness, itching, and pain or tenderness. Moreover, skin samples from 3 volunteer patients were subjected to histological evaluation and 5 patients underwent thermography during therapy. The average total scar assessment score dropped from 9.86 to 6.34. Hematoxylin and eosin staining and Elastica Masson-Goldner staining showed that laser treatment structurally changed the tissue collagen. This influence reached a depth of 0.5 to 1 mm. Electron microscopy revealed plasma protein leakage, proteoglycan particles, and a change in the collagen fiber fascicles. Further analyses revealed that noncontact mode Nd:YAG laser treatment is highly effective for keloids and hypertrophic scars regardless of patient age, the origin and multiplicity of scarring, the location of the scar(s), or the tension on the scar.

a/ Side effects of ulceration or hyperpigmentation
b/ 34-24% No results,
c/ 21-35% keloid reoccurs

Laser Efficiency on Wounds Keloids and Hypertrophic Scars



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Laser therapy for treating hypertrophic and keloid scars

Rafael Leszczynski, Carolina AP da Silva, Uliana Kuczynski, Edina MK da Silva Authors' declarations of interest

Version published: 14 April 2015 Version history

https://doi.org/10.1002/14651858.CD011642

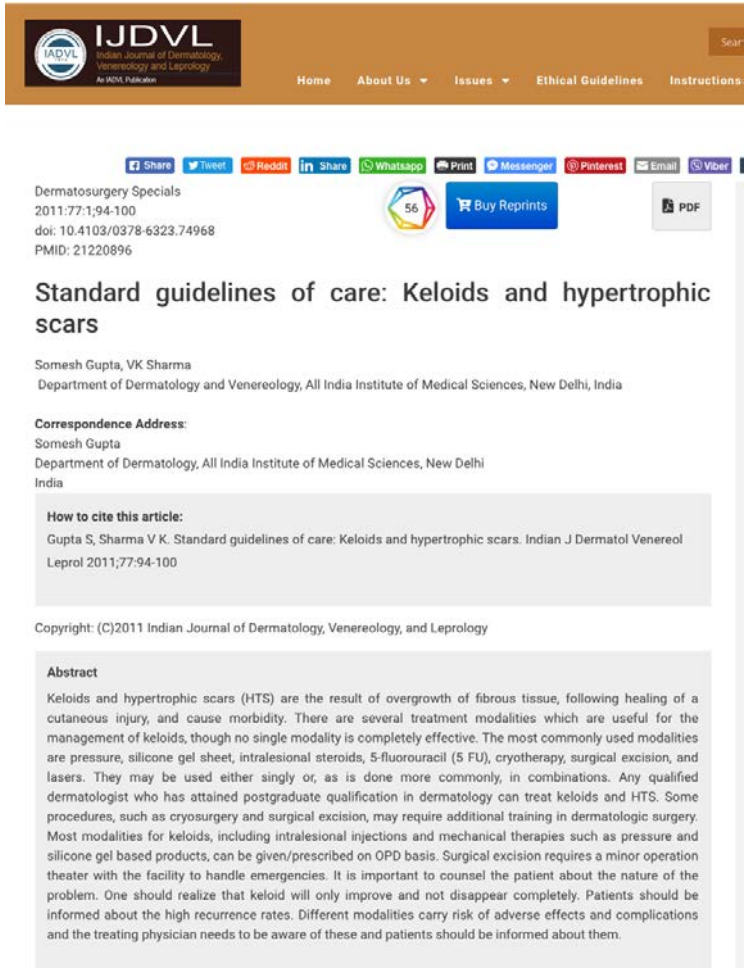
Collapse all Expand all

Abstract

This is a protocol for a Cochrane Review (Intervention). The objectives are as follows:

To assess the effects and safety of laser therapy for treating hypertrophic and keloid scars.

Background



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Dermatosurgery Specials
2011:77:1;94-100
doi: 10.4103/0378-6323.74968
PMID: 21220896

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Standard guidelines of care: Keloids and hypertrophic scars

Somesh Gupta, VK Sharma
Department of Dermatology and Venereology, All India Institute of Medical Sciences, New Delhi, India

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Department of Dermatology, All India Institute of Medical Sciences, New Delhi
India

How to cite this article:
Gupta S, Sharma V K. Standard guidelines of care: Keloids and hypertrophic scars. Indian J Dermatol Venereol Leprol 2011;77:94-100

Copyright: (C)2011 Indian Journal of Dermatology, Venereology, and Leprology

Abstract

Keloids and hypertrophic scars (HTS) are the result of overgrowth of fibrous tissue, following healing of a cutaneous injury, and cause morbidity. There are several treatment modalities which are useful for the management of keloids, though no single modality is completely effective. The most commonly used modalities are pressure, silicone gel sheet, intralesional steroids, 5-fluorouracil (5 FU), cryotherapy, surgical excision, and lasers. They may be used either singly or, as is done more commonly, in combinations. Any qualified dermatologist who has attained postgraduate qualification in dermatology can treat keloids and HTS. Some procedures, such as cryosurgery and surgical excision, may require additional training in dermatologic surgery. Most modalities for keloids, including intralesional injections and mechanical therapies such as pressure and silicone gel based products, can be given/prescribed on OPD basis. Surgical excision requires a minor operation theater with the facility to handle emergencies. It is important to counsel the patient about the nature of the problem. One should realize that keloid will only improve and not disappear completely. Patients should be informed about the high recurrence rates. Different modalities carry risk of adverse effects and complications and the treating physician needs to be aware of these and patients should be informed about them.

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Clinical Trial > Dermatology. 2002;204(2):130-2. doi: 10.1159/000051830.

Efficacy and safety of intralesional 5-fluorouracil in the treatment of keloids

Somesh Gupta [1], Amit Kalra

Affiliations + expand

PMID: 11937738 DOI: 10.1159/000051830

Abstract

Background: The treatment of keloids remains challenging. Cryosurgery and intralesional corticosteroids have been considered as the mainstream of therapy; however, the long-term use of corticosteroids has been found to be associated with serious side effects. Intralesional 5-fluorouracil (5-FU) has only been used in one study for the treatment of hypertrophic scars and keloids, mostly in combination with other treatments. The efficacy of 5-FU as an individual therapeutic agent is unknown.

Objective: To evaluate the efficacy and safety of intralesional injections of 5-FU in the treatment of small keloid lesions.

Methods: Twenty-four (12 male, 12 female) consecutive patients with keloids of 6 cm or less in their maximum dimension were treated with intralesional injections of 50-150 mg 5-FU per week for a maximum of 16 injections.

Results: One third (8/24, 33.3%) of the patients showed more than 75% flattening of the keloid. Three out of 8 patients (with >75% flattening) required less than 16 (13, 13 and 15) injections for achieving the desired response. Overall, about half of the patients showed more than 50% flattening of the treated keloid. A correlation with the duration of keloid was found. Six (54.5%) out of 11 patients with keloids of < or =5 years duration, in contrast to only 2 (15.4%) out of 13 patients with keloids of >5 years duration showed more than 75% flattening ($p < 0.05$). Side effects included pain (all patients), hyperpigmentation (all patients) and ulceration (1 patient). No difference in peripheral blood count was noted before, during and after the therapy.

Conclusion: Intralesional 5-FU can be safely used for the management of small keloids of shorter duration.

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Int J Med Sci. 2010; 7(1): 29–35. PMCID: PMC2792735
Published online 2009 Dec 6. doi: 10.7150/ijms.7.29 PMID: 20046232

Ultra-low microcurrent in the management of diabetes mellitus, hypertension and chronic wounds: Report of twelve cases and discussion of mechanism of action

Bok Y. Lee,[1,✉] Noori AL-Waili,[2] Dean Stubbs,[3] Keith Wendell,[4] Glenn Butler,[5] Thia AL-Waili,[6] and Ali AL-Waili[7]

ABSTRACT

Oxidative stress plays a major role in the pathc
cardiovascular diseases including hypertensior
raised levels of markers of free radical damage
low microcurrent presumably has an antioxida
healing. The purpose of the study is to investig
the Electro Pressure Regeneration Therapy (EI
CA) in the management of diabetes, hypertens
electrical device that sends a pulsating stream
throughout the body. The device is noninvasiv
endogenous electric energy of the human body
delivers a direct current (maximum of 3 milliA
switched to the opposite polarity for another 1
23min or 0.000732 Hz and delivers a square w
to a maximum of 40 V. The device produces a
patients with long standing diabetes, hypertens
The patients were treated approximately for 3.
on scale used by National Pressure Ulcer Advi
Patients were followed-up with daily measurer
their requirement for medications was recorde
their response. Results showed that diabetes m
using this device, and their wounds were mark
their medication or completely stopped after th
The mechanism of action was discussed.

Keywords: Diabetes mellitus, hypertension, w

Springer Link

Published: November 2007

Ultra-low microcurrent therapy: A novel approach for treatment of chronic resistant wounds

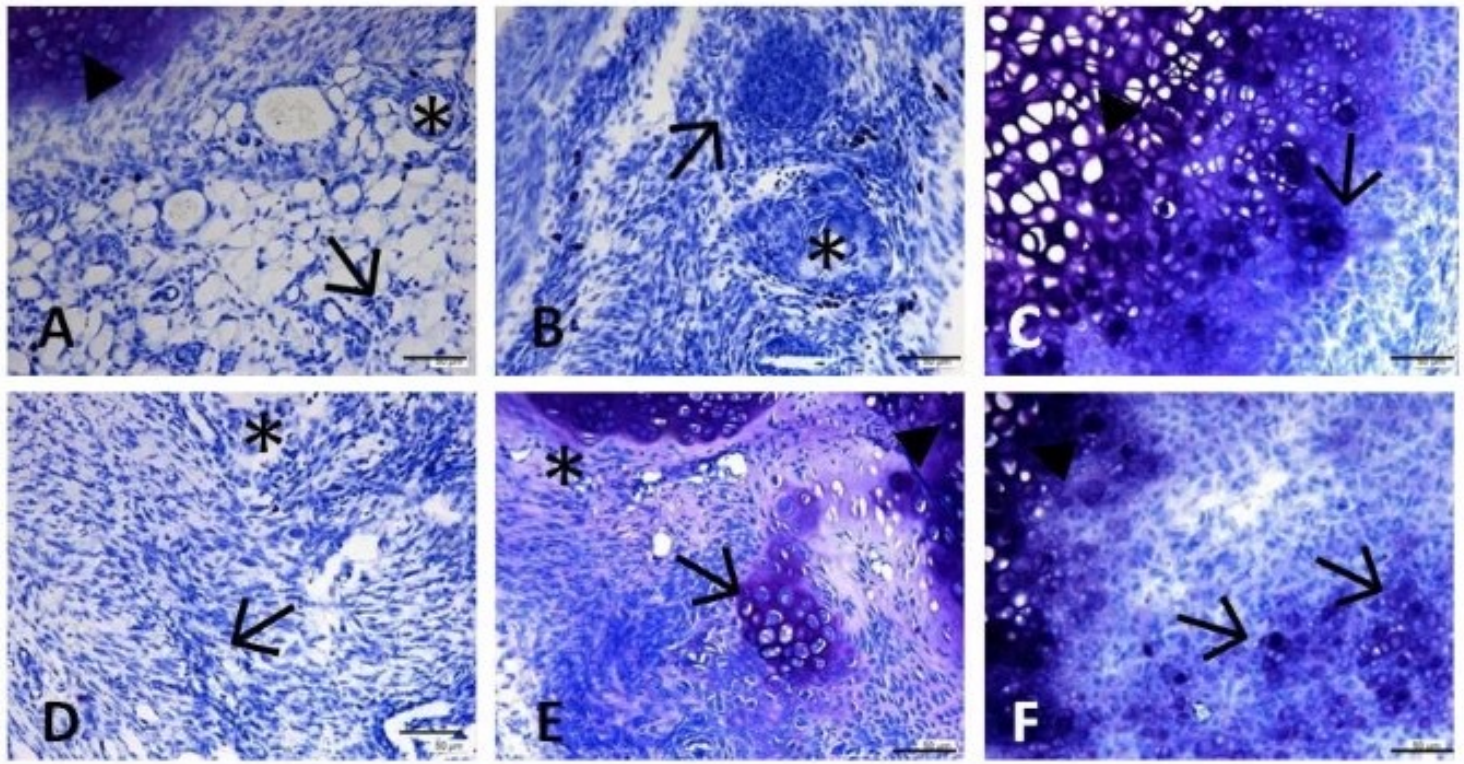
Bok Y. Lee, Keith Wendell, Noori Al-Waili ✉ & Glenn Butler

Advances in Therapy **24**, 1202–1209 (2007) | Cite this article

Abstract

This study was undertaken to investigate the efficacy of ultra-low microcurrent delivered by the Electro Pressure Regeneration Therapy (EPRT) device for the management of chronic wounds. In this study, 23 patients with chronic skin ulcers and 2 with abdominal dehiscence that was present for an average of 16.5 mo, who were not responsive to standard conservative treatment in a hospital setting, were treated with the EPRT device. Wounds were treated with direct current (maximum of 3 mA) of 1 polarity for 11.5 min and then with a current of the opposite polarity for another 11.5 min. Treatment was applied through ultra-low microcurrents (in the mA to nA range) conducted through special wraps applied above and below the wound. The results revealed that 34.8% of cases achieved complete wound healing after an average of 45.6 h of treatment, and 39.1 % achieved ≥50% healing after an average of 39.7 h of treatment. Several patients achieved significant results after 1 to 2 treatments. The EPRT device not only accelerated healing but also appeared to negate the effect of a person's age on wound healing.

Permanent healing by Ultra-low energies in the management of diabetes mellitus, hypertension and chronic wounds:

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Health > Vol.12 No.7, July 2020

Technological Advances in Accelerated Wound Repair and Regeneration

Xanya Sofra[1], Nuris Lampe[2]

[1]Research and Technology Development, IELLIOS Ltd., Ipwsich, UK.

[2]Clinical Dermatology Department of Horatio Oduber Hospital, Oranjestad, Aruba.

DOI: 10.4236/health.2020.127053 **PDF** **HTML** **XML** **244** Downloads **750** Views

Abstract

We reviewed a number of wound repair, keloid and hypertrophic scar research methods that included lasers, microcurrent and ultra-low energy technologies. Laser research reports short-term improvement in wounds, keloid and hypertrophic scars, but without follow up to control for reoccurrence of keloids or diabetic lesions which generally reoccur following laser treatments. The microcurrent and ultra-low energy studies demonstrate significant healing where age is not a factor with no reoccurrence of diabetic wounds and other skin lesions. Our randomized, double-blind longitudinal research on eight wound repair clinical cases with an age range of 28 - 86, followed for one year, evidenced accelerated healing and no reoccurrence. The number of treatments required for substantial healing depended on the chronicity and severity of the lesion, with chronic severe lesions requiring more treatments, rather than age, a conclusion supported by ultra-low microcurrent research. These results on age-independent wound healing directly contradict a large body of literature postulating that healing is much slower with age due to immune insufficiency, age-accumulated oxidative stress, disrupted cell communications and sustained inflammation.

Keywords

Keloids, Acute Wounds, Hypertrophic Scars, Inflammation, Eschar Wounds, Herpes Zoster, Aging, Wound Healing, Diabetic Lesions

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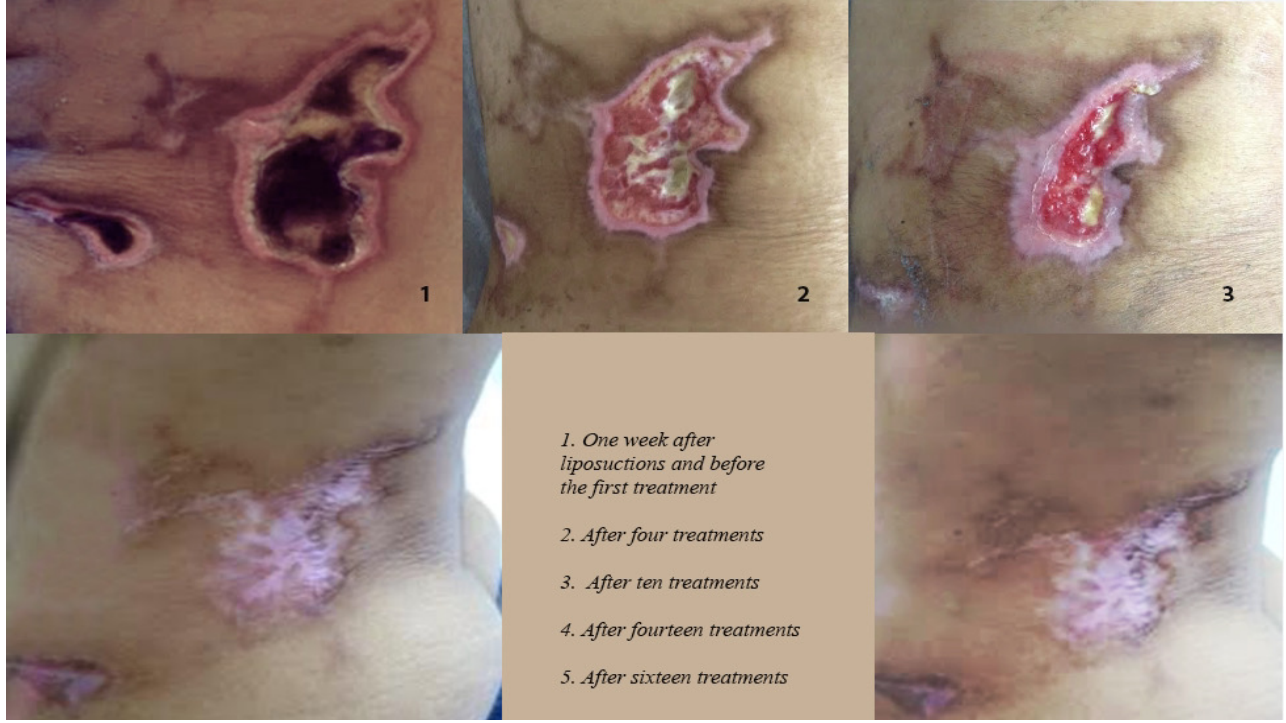
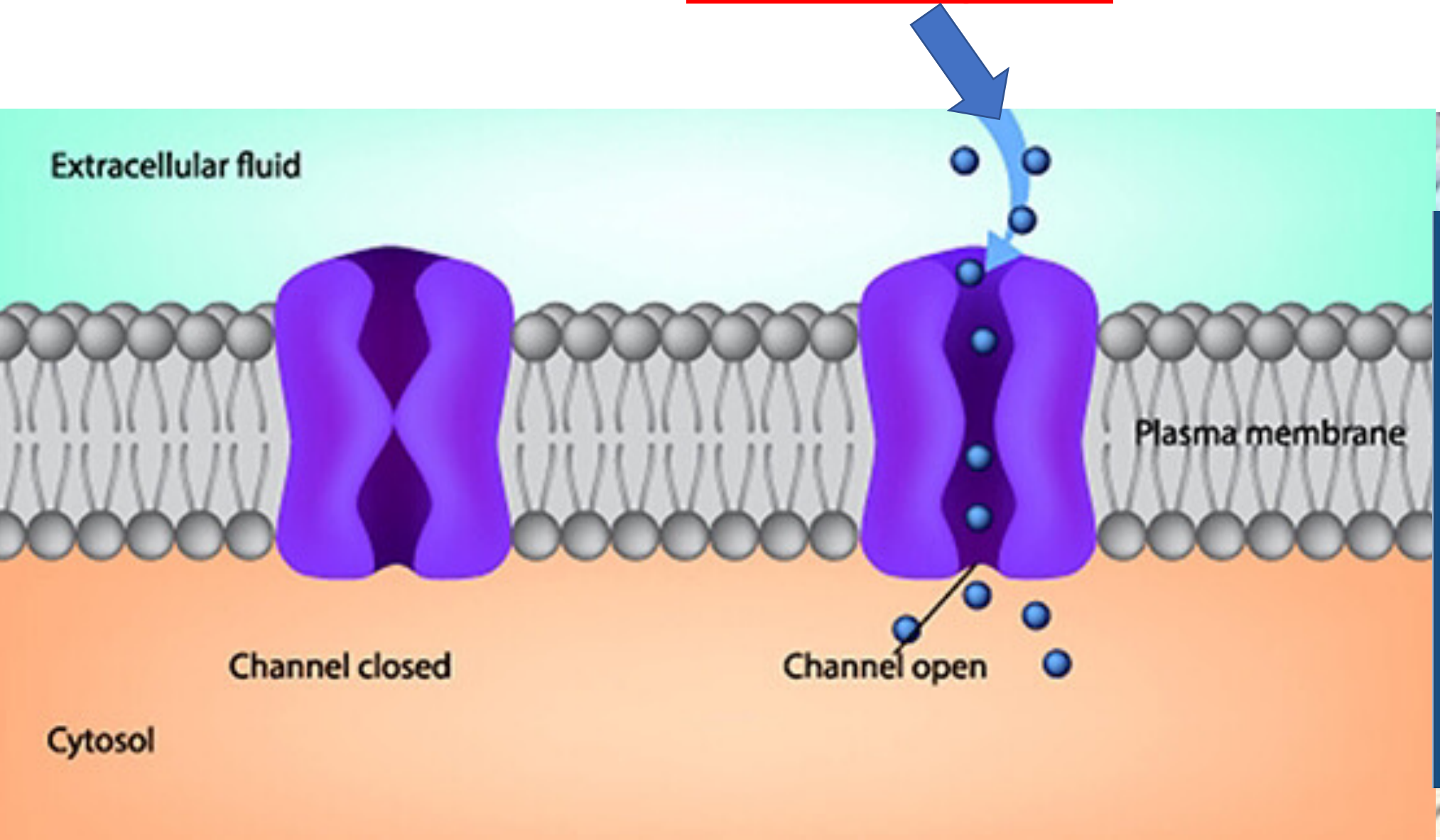
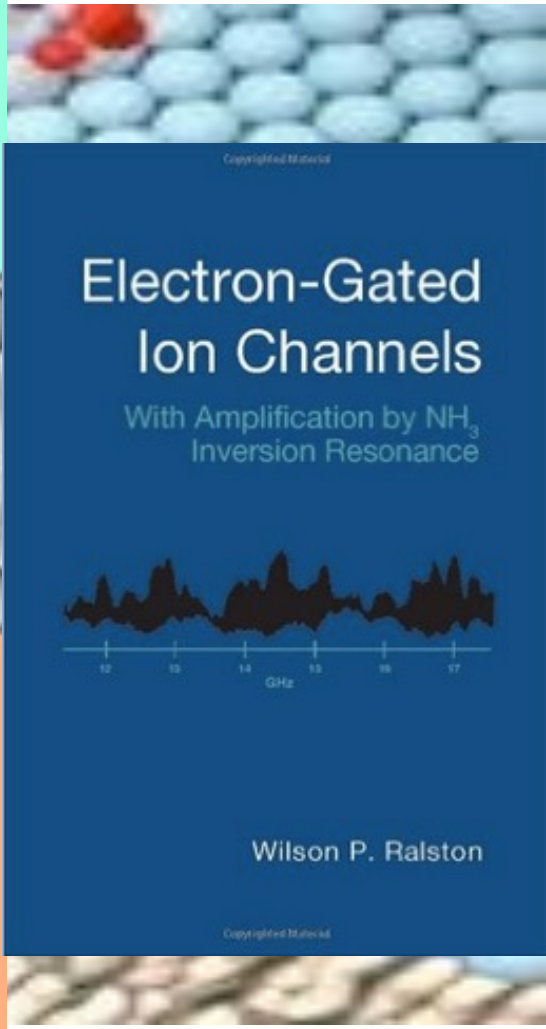
Sofra, X. and Lampe, N. (2020) Technological Advances in Accelerated Wound Repair and Regeneration. *Health*, **12**, 717-737. doi: 10.4236/health.2020.127053.

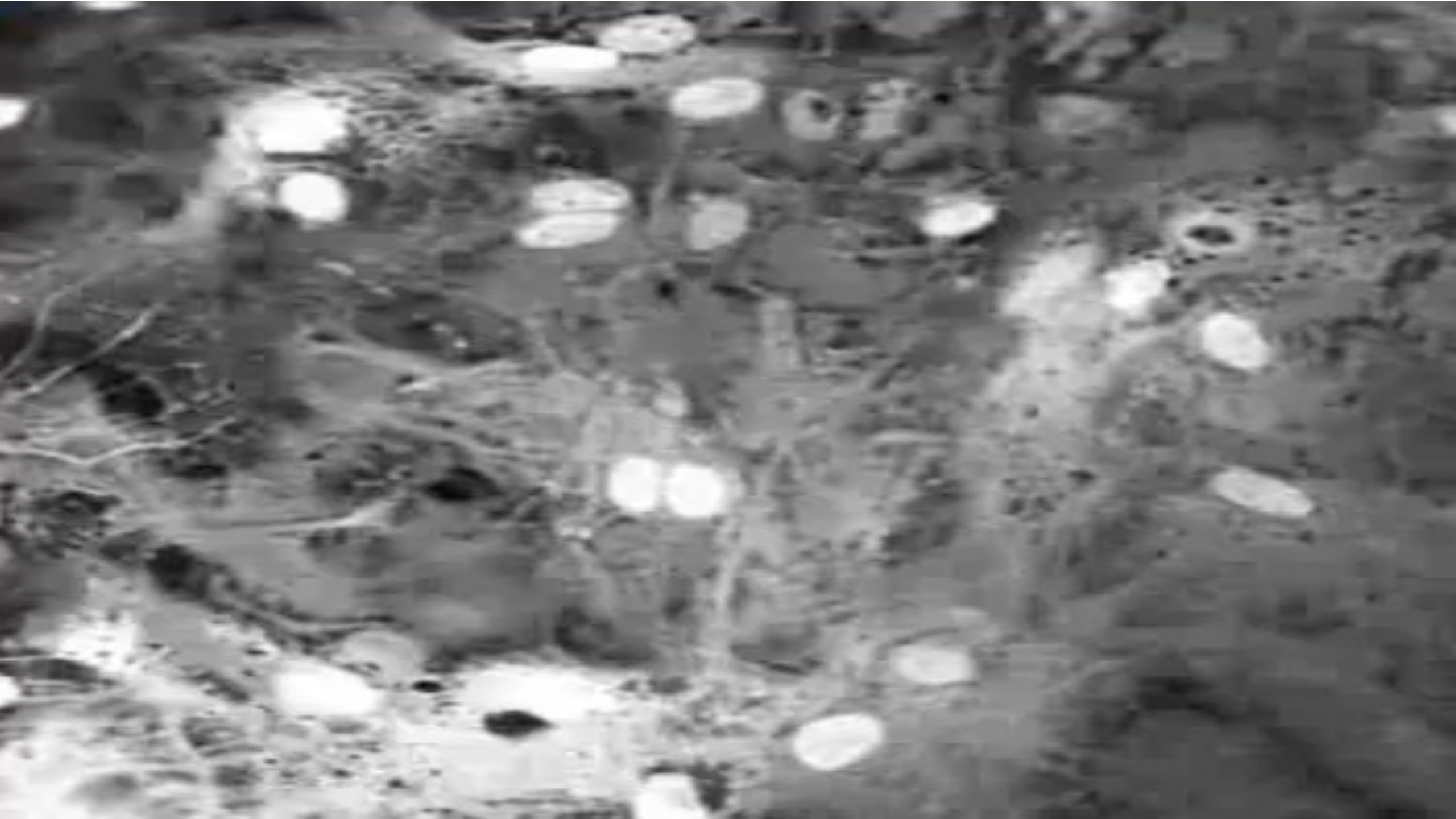


POSTOPERATIVE SKIN CANCER WOUND BEFORE AFTER SIX TREATMENTS

At Energies below thermal noise Electrons amplify Ion channels to allow the **IELLIOS signals** to enter the cells







Adverse Effects of Sedentary Lifestyles: Inflammation, and High-Glucose Induced Oxidative Stress—A Double Blind Randomized Clinical Trial on Diabetic and Prediabetic Patients

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CONTRIBUTORS: Xanya Sofra

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Technological Advances in Accelerated Wound Repair and Regeneration

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Exercise Solution for the Optimal Metabolic Control of Type II Diabetes

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A Randomized Longitudinal Double-Blind Clinical Trial on Long-Term Neuropathic Symptomatology Relief & Pain Analgesia

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Adverse Effects of Sedentary Lifestyles: Inflammation, and High-Glucose Induced Oxidative Stress—A Double Blind Randomized Clinical Trial on Diabetic and Prediabetic Patients

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The Importance of Systemic Balance in Safeguarding Health: A Randomized Double-Blind Clinical Trial on VLDL, Triglycerides, Free T3, Leptin, Ghrelin, Cortisol and Visceral Adipose Tissue

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CONTRIBUTORS: Xanya Sofra

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A Review of COVID19 associated factors: CRP, Creatinine, Bilirubin, VLDL, HDL, Triglycerides, Cortisol and Thyroid Function

Journal of Endocrinology and Metabolism Research
2020-11-01 | Journal article
DOI: 10.37191/mapsci-2582-7960-1(2)-011
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CONTRIBUTORS: Xanya Sofra

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The Affinity between Obesity and COVID-19

Journal of Endocrinology and Metabolism Research
2020-10-01 | Journal article
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CONTRIBUTORS: Xanya Sofra

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How to get rid of visceral fat: a randomised double-blind clinical trial

Journal of Aesthetic Nursing
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CONTRIBUTORS: Xanya Sofra

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Balancing hormones improves Type 2 diabetes

Journal of Diabetes, Metabolic Disorders & Control
2022-08-17 | Journal article
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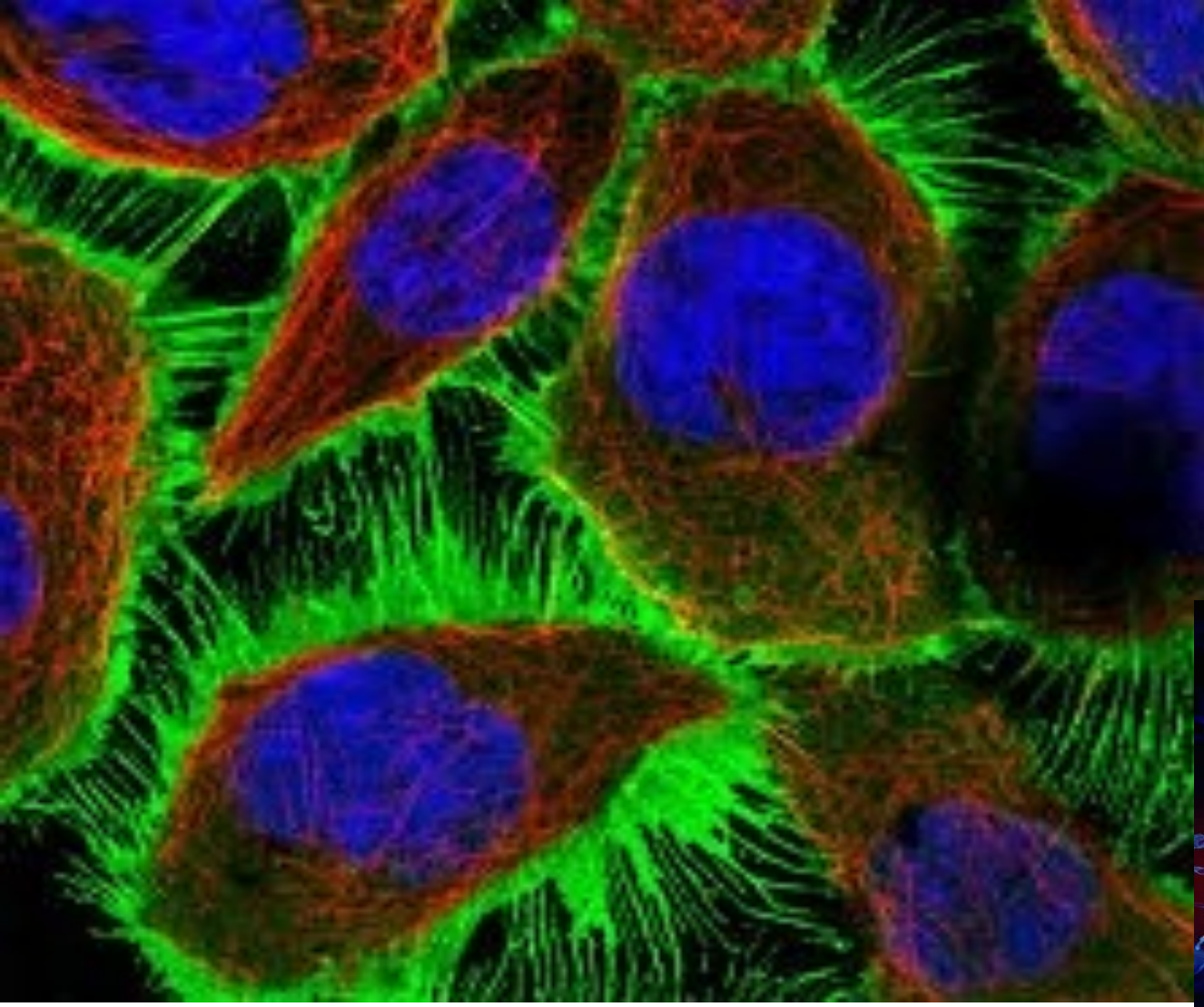
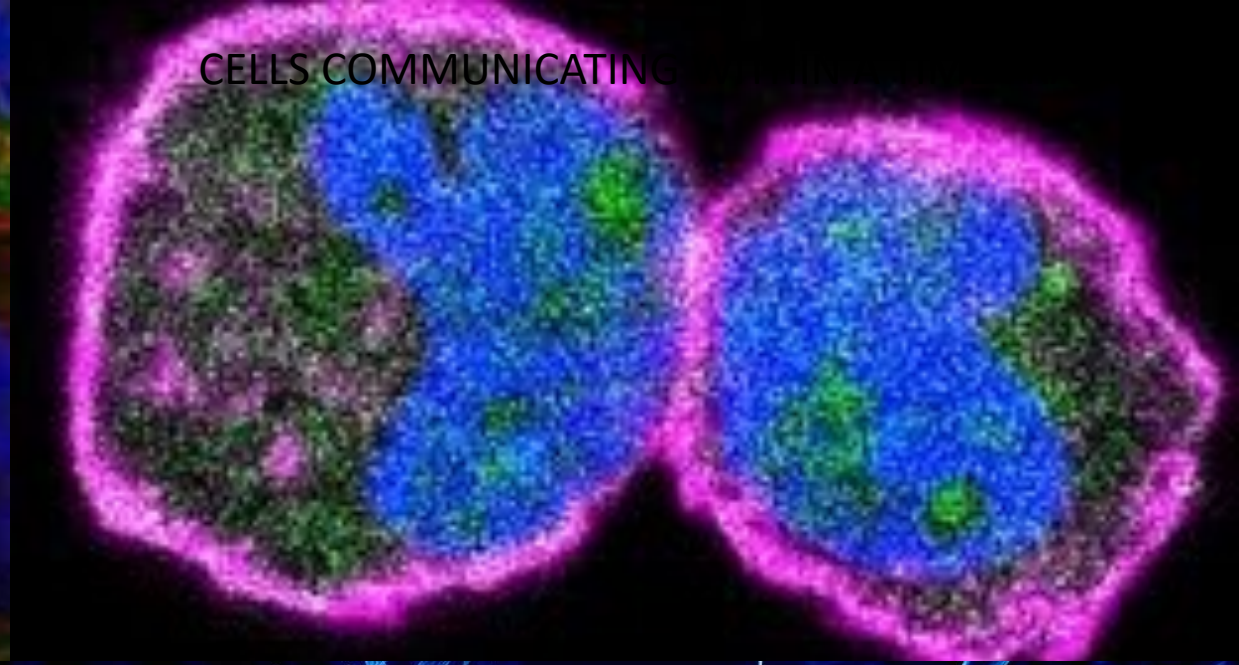
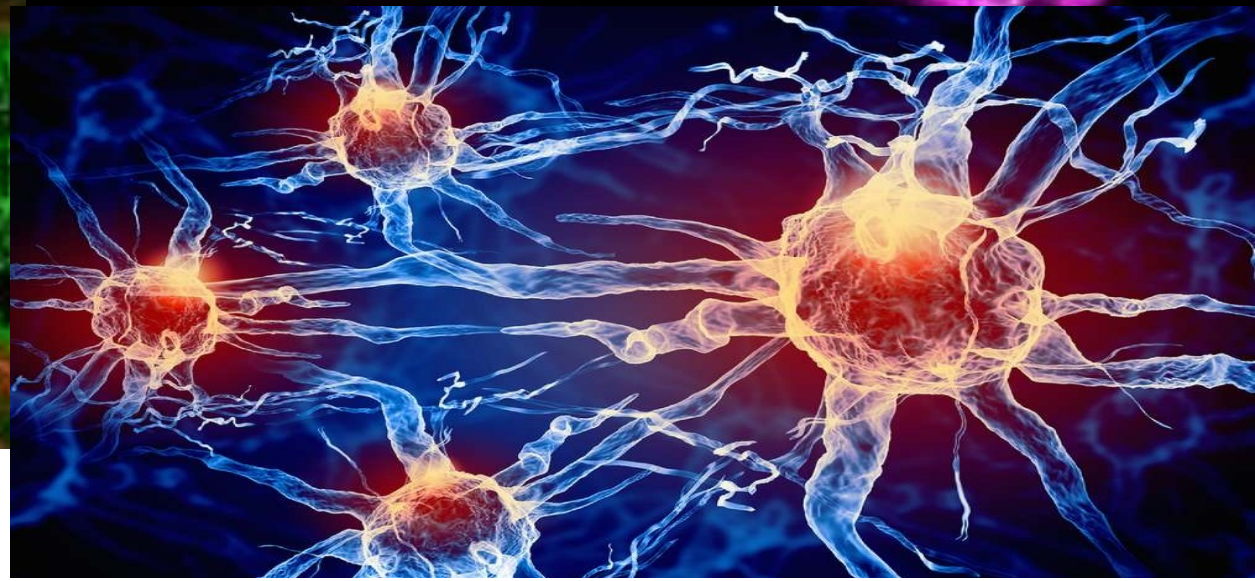
DIABETIC WOUNDS

8 TREATMENTS

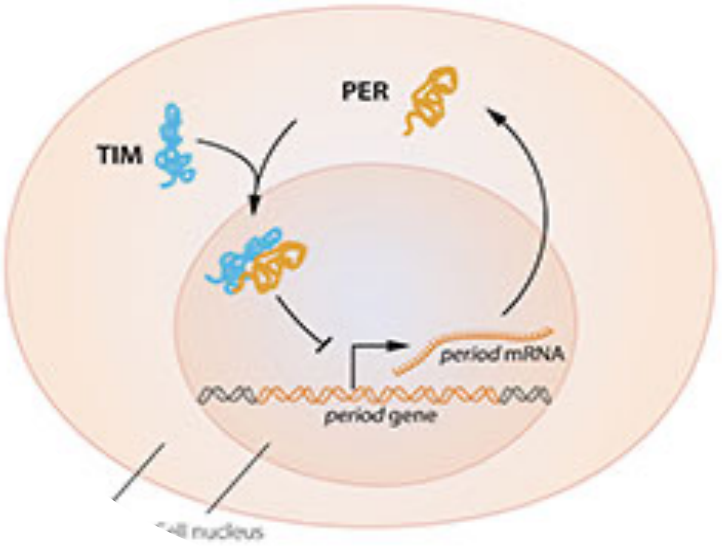
KELOID SCAR AFTER LIPOSUCTION WOUND
TREATED WITH SIGNALING – 6 TREATMENTS







DISRUPTION OF CELLULAR CIRCADIAN RHYTHMS IS FOLLOWED BY A DISRUPTION IN CELLULAR COMMUNICATIONS



CELLS ARE GOVERNED BY THEIR BIOLOGICAL CLOCKS IN ORDER FOR OPTIMUM COMMUNICATION TO TAKE PLACE BETWEEN ARTIFICIAL INTELLIGENCE (AI) BLUEPRINT SIGNALS AND NATURALLY OCCURING BIOLOGICAL SIGNALS, THE AI SIGNALS MUST BE DELIVERED WITHIN PRE-DEFINED VARIABLE TIMES THAT MAPS THE TIME SCHEDULE OF BIOLOGICAL SIGNALS. THEREFORE, THE IREVIVE IS DESIGNED ON THE BASIS OF A MATRIX OF SIGNALS DELIVERED WITHIN A TIME MATRIX

The Nobel Prize in Physiology or Medicine 2017

© Nobel Media AB. Photo: A.Mahmoud

Jeffrey C. Hall

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Michael Rosbash

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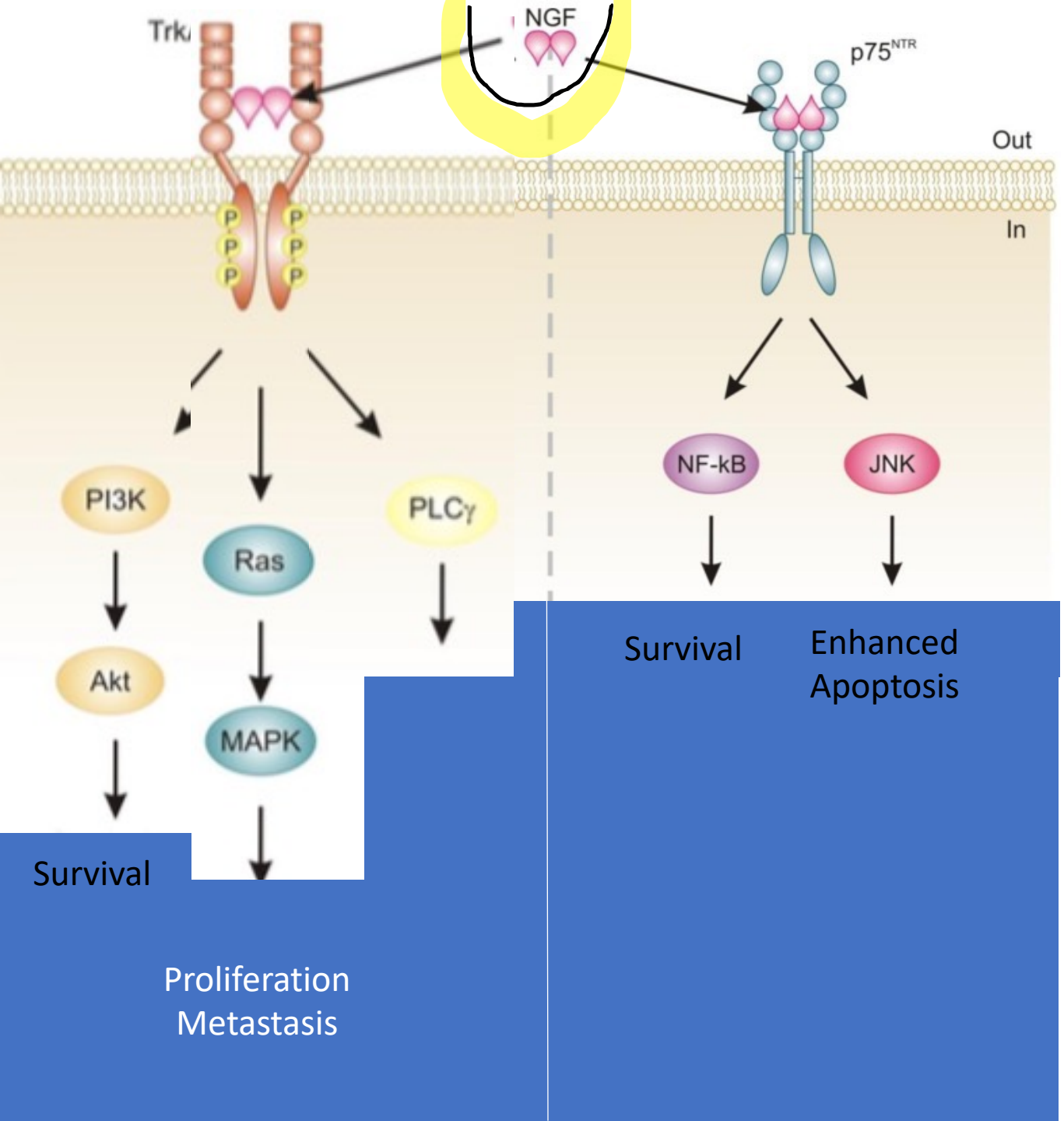
Michael W. Young

Prize share: 1/3

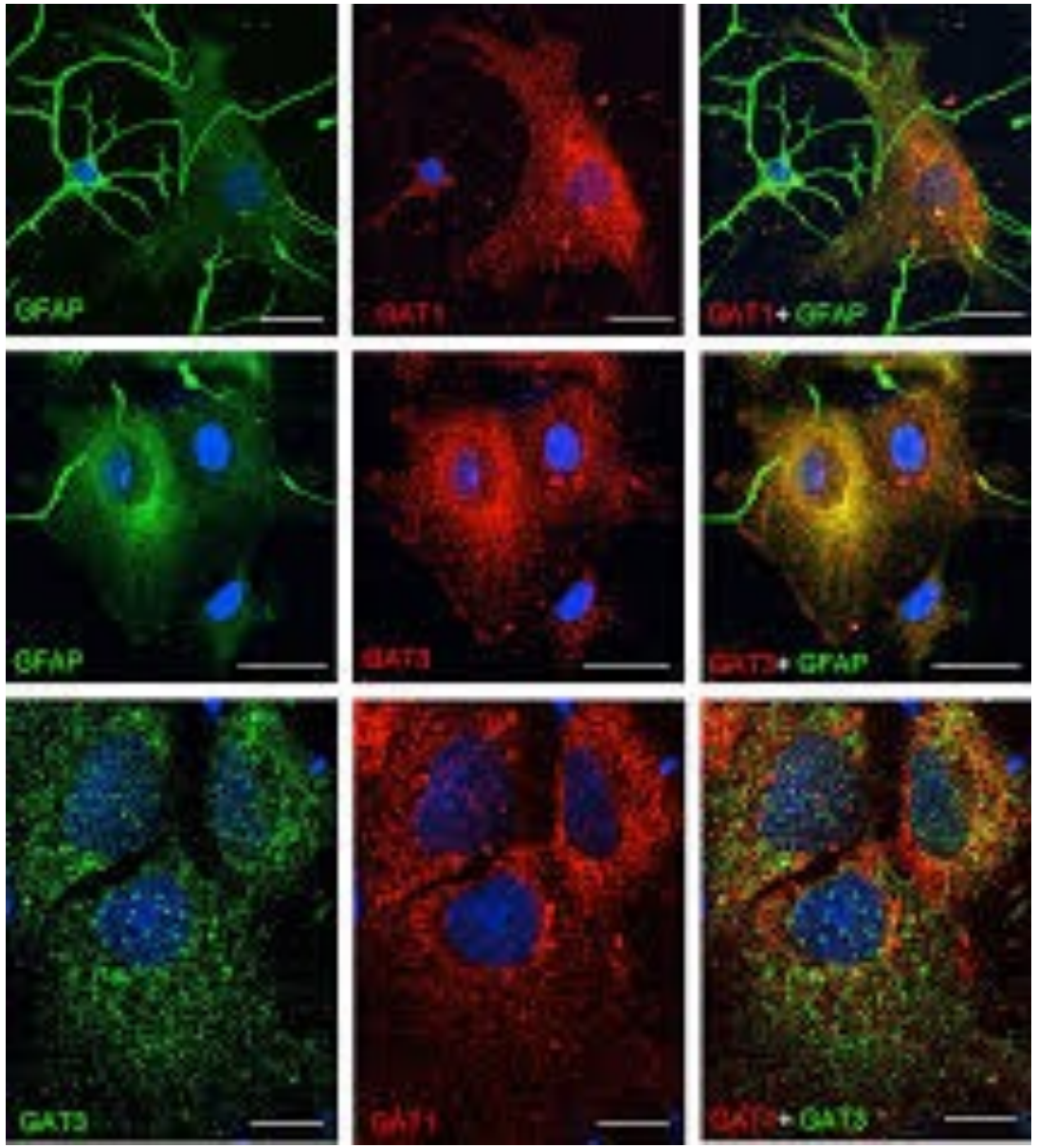
The Nobel Prize in Physiology or Medicine 2017 was awarded jointly to Jeffrey C. Hall, Michael Rosbash and Michael W. Young "for their discoveries of molecular mechanisms controlling the circadian rhythm."



The Importance of the
TIIMING OF THE SIGNAL

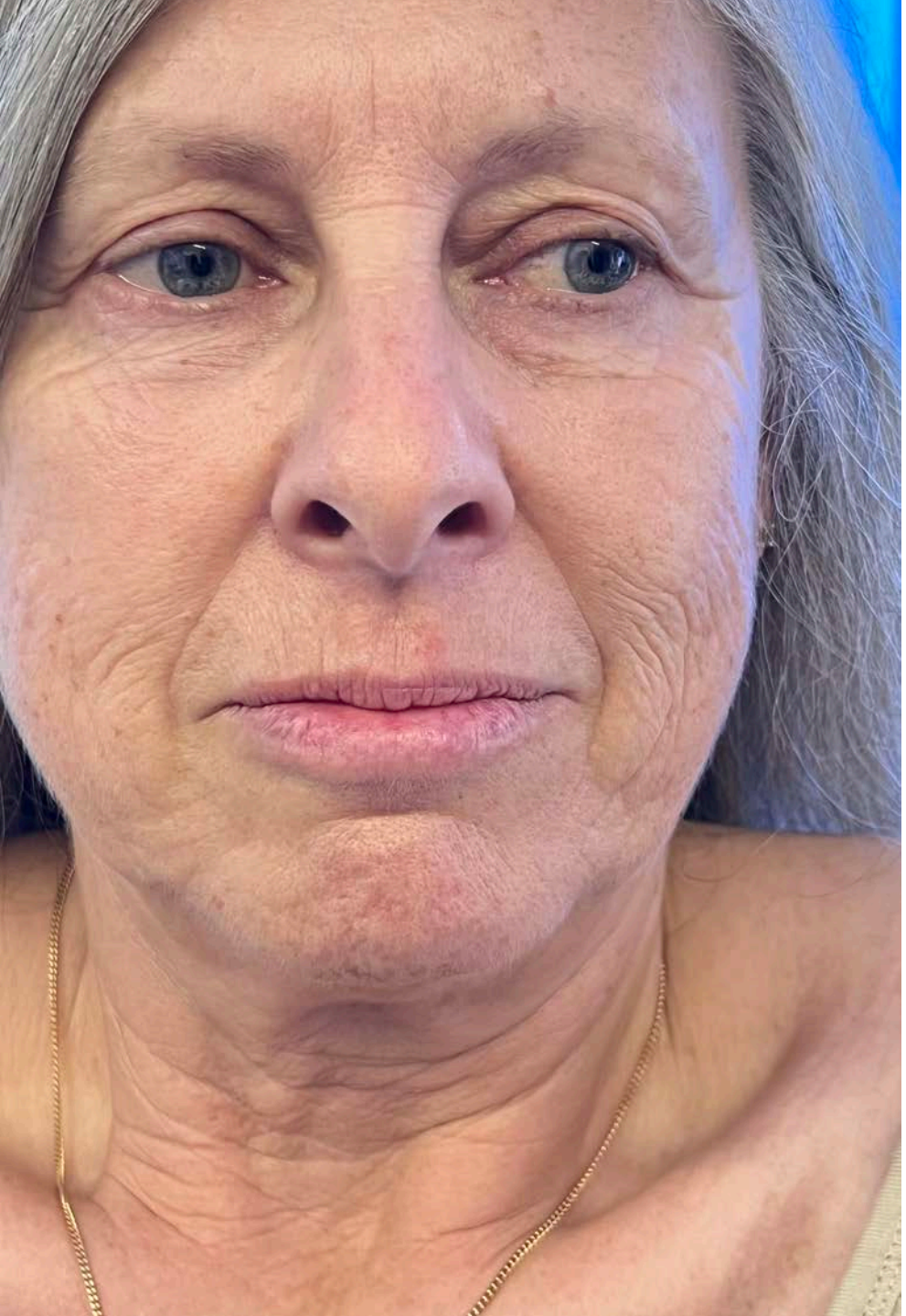
THE SAME Signal EMITTED AT DIFFERENT TIMES CAN EnhancE OR Suppress Cancer

Localization and Expression of
GABA Transporters in the Suprachiasmatic Nucleus



TIMING WITHIN THE CELL

- "Every single cell in your body is controlled by its own circadian clock. It helps every cell figure out when to use energy, when to rest, when to repair DNA, or to replicate DNA." *Salk Institute circadian researcher Satchin Panda*



Rejuvenation
One Treatment
20 min

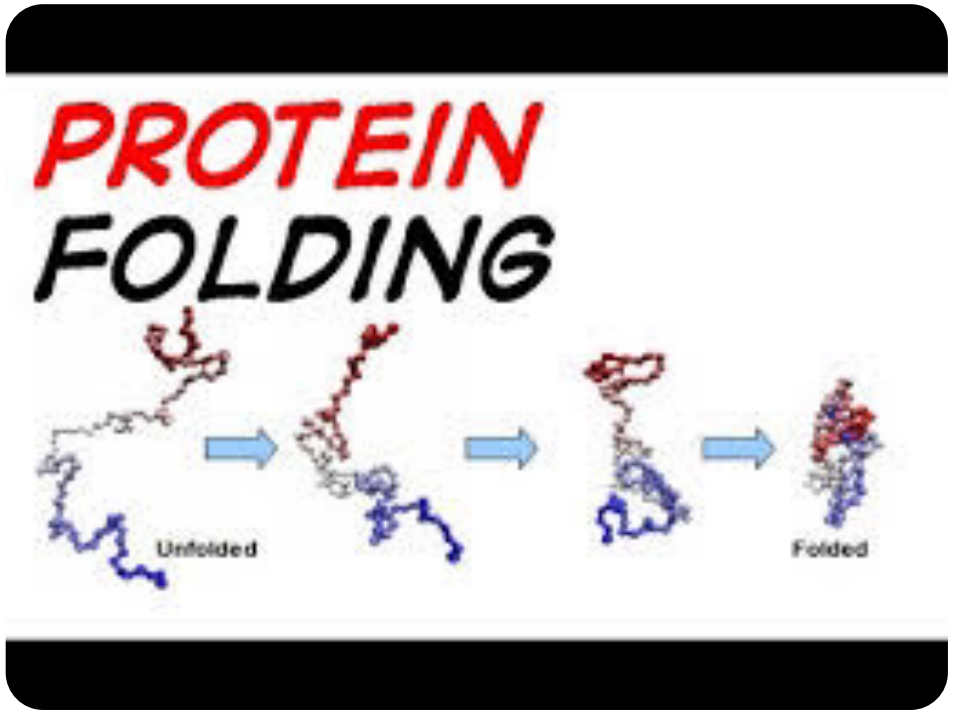
One
Treatment
20 min

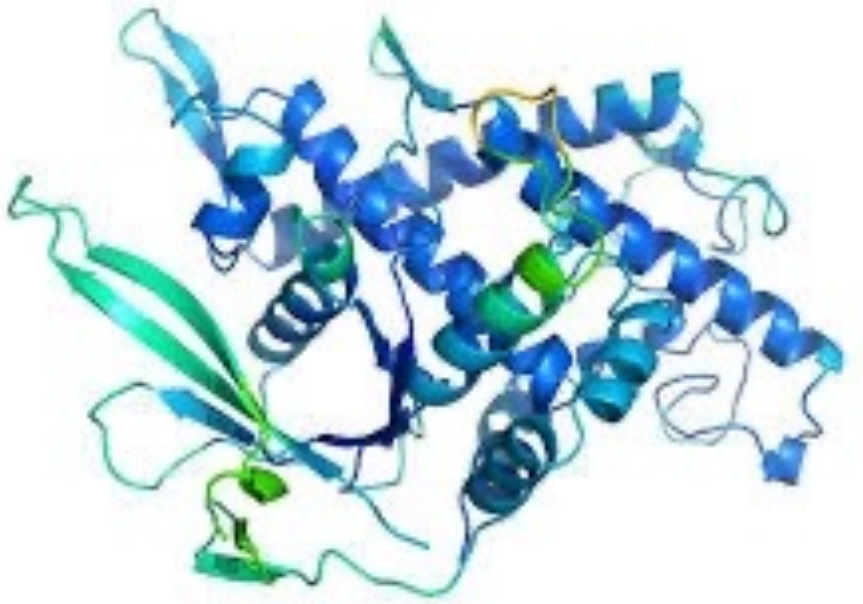
One
Treatment
20 min

BELLS PALSY THREE TREATMENTS

ANTI-AGING

PIGMENTATIONS





THANK YOU
FOR YOUR KIND ATTENTION
PLEASE E-MAIL ME WITH QUESTIONS AT SCIENCE@IELLIOS.COM