21ST CENTURY INFRARED HEALING

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Outline

- What is infrared?
- Human Infrared
- Body Temperature
- Body Temperature and the Immune System
- Infrared Therapy
- Cancer and Infrared
- Infrared as an Information Carrier
- Infrared Technologies
- Conclusion

This presentation at:
https://www.bio-mats.com/tt2016

Disclaimer

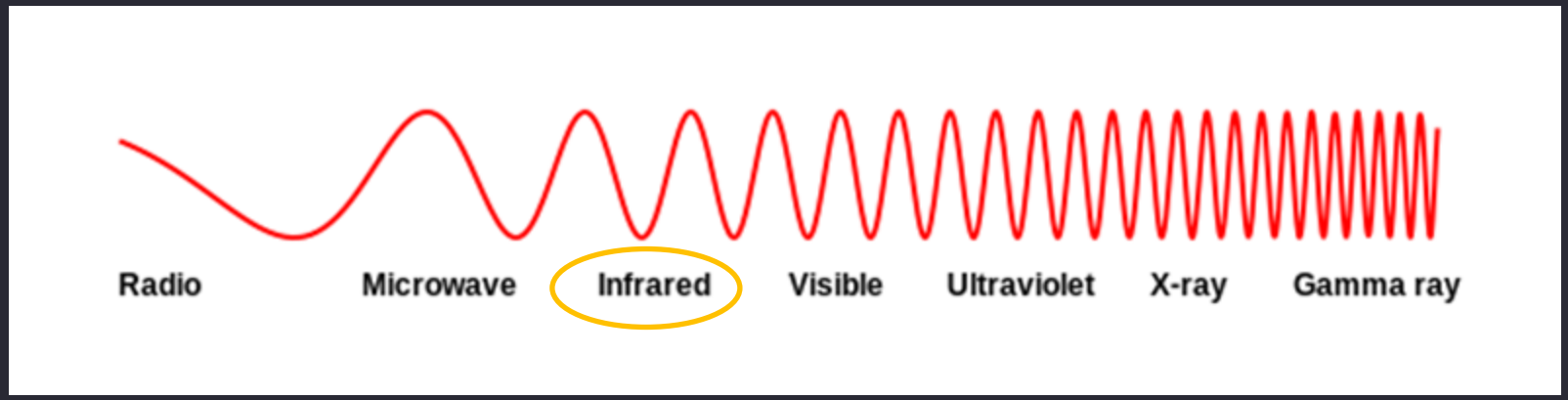
- This information is not intended to cure, diagnose or treat medical conditions. Please consult with a qualified health practitioner before beginning any new health care program.

- Many of the things in this presentation are not expected to be approved by the FDA until later in this century

What is Infrared?

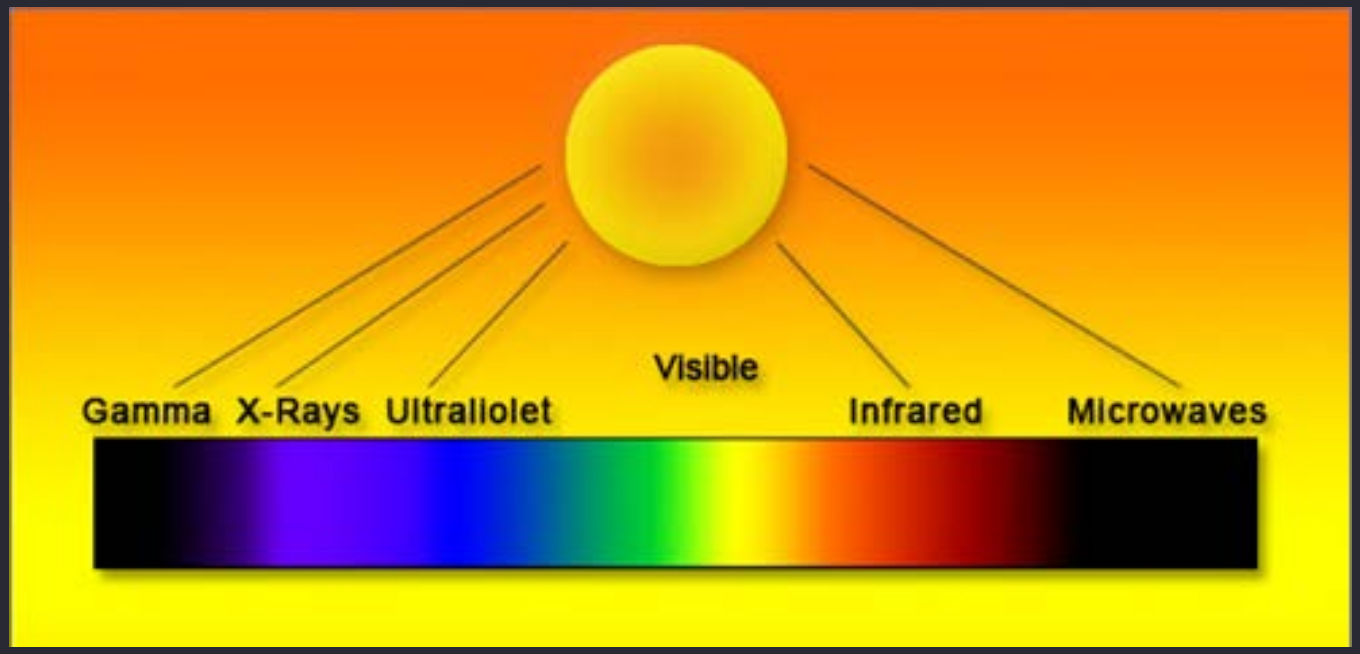
What is Infrared

- A type of light that we cannot see with our eyes
- A band in the *electromagnetic spectrum*
- The prefix 'infra' means 'below' (lower frequency than red light)



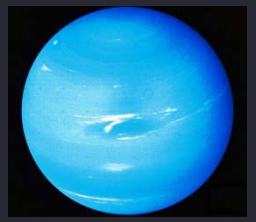
Energy from the Sun

- About 49% of the energy from the Sun that warms the earth is infrared



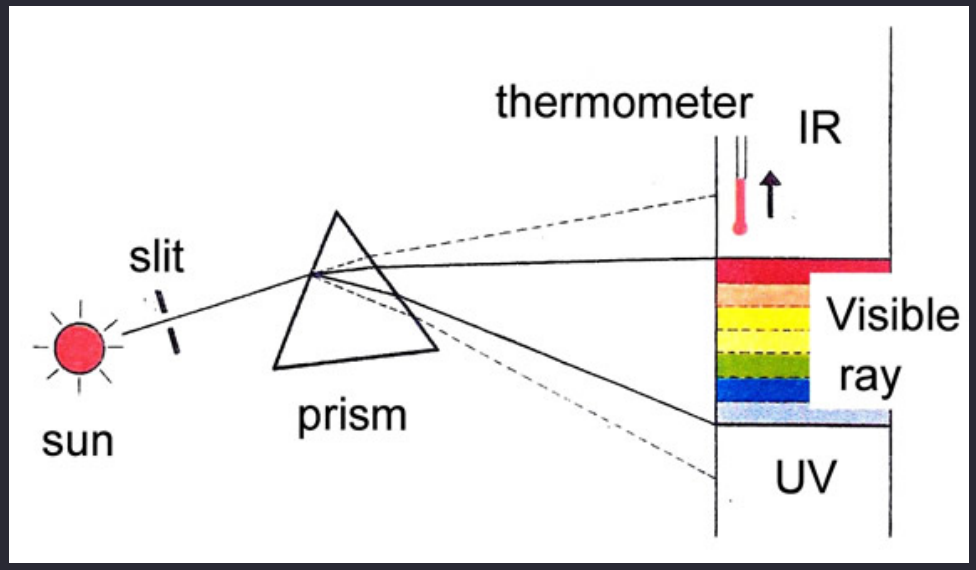
Discovery of Infrared

- Sir Frederick William Herschel (1738-1822)
- Musician and astronomer
- Most famous for his discovery of the planet Uranus in 1781



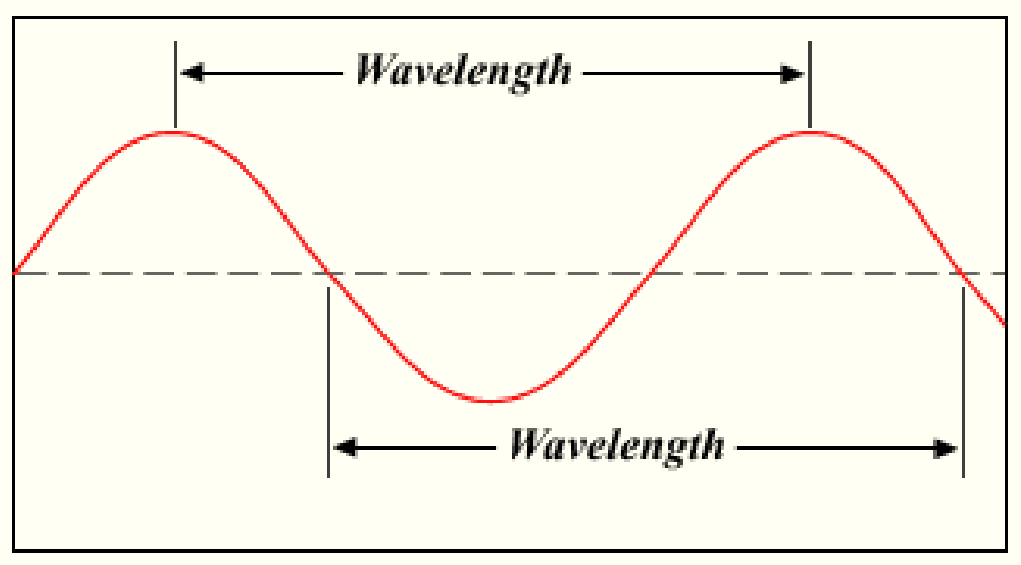
Discovery of Infrared

- In 1800, Herschel identified what he called, "calorific rays," that existed beyond the red part of the spectrum
- Later renamed infrared

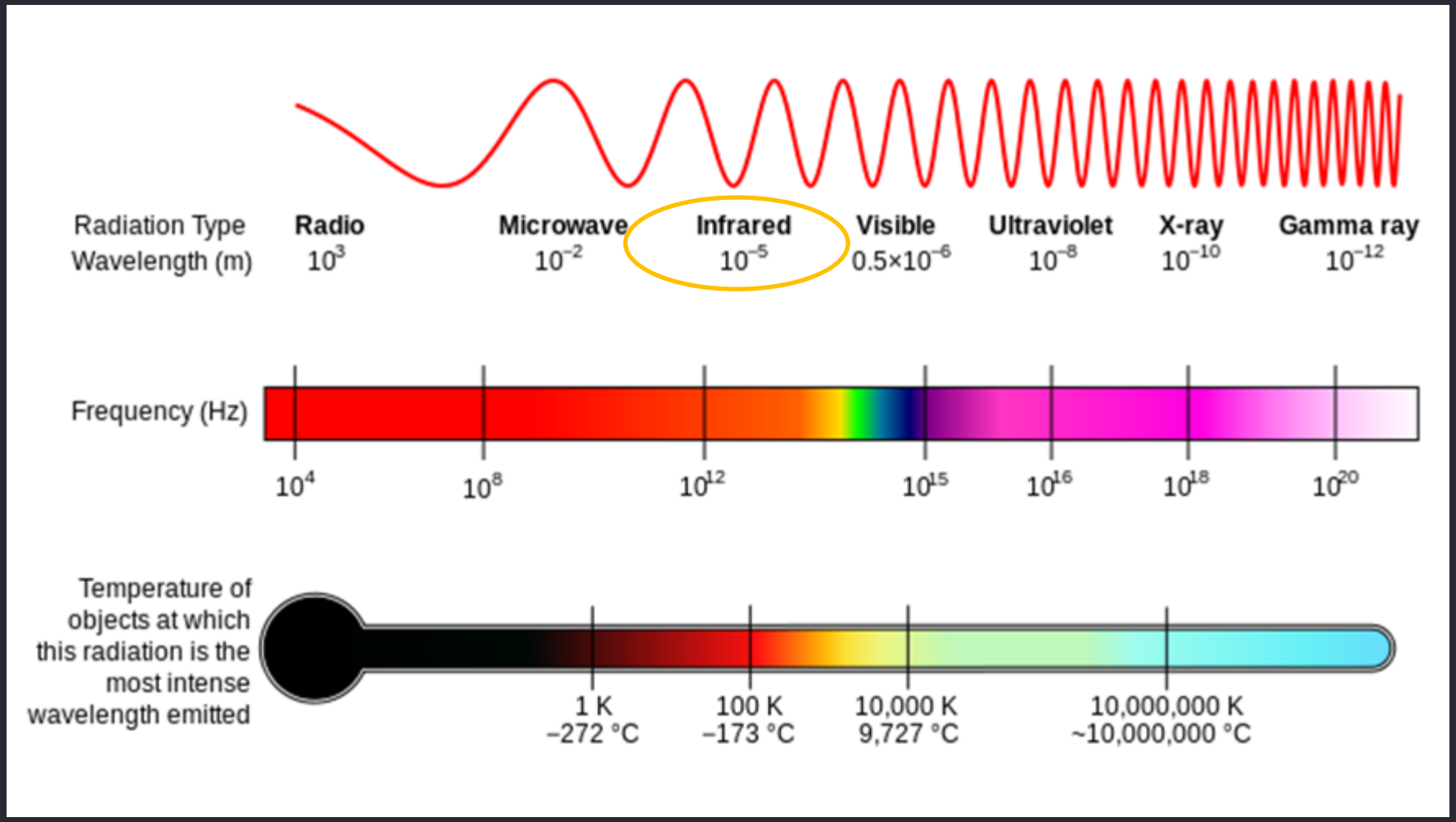


Wavelength and Frequency

- **Wavelength**: Length of a cycle
- **Frequency**: The number of cycles per time
- Shorter Wavelength = Higher Frequency



The Electromagnetic Spectrum



Units

1 micron (μm) = 1 millionth of a meter
1 nanometer (nm) = 1 billionth of a meter

1 micron = 1,000 nanometers

1 inch = 25,400 microns (μm)

Infrared Frequency

- Visible Light
  - Wavelength: 390 – 700 nm
  - Frequency: 430 – 770 THz

- Infrared
  - Wavelength: 700 nm – 1 mm
  - Frequency: 300 GHz – 770 THz

Infrared Designation

- Near Infrared
- Mid Infrared
- Far Infrared?

- Many people refer to Far Infrared (FIR), but there are multiple classifications used to designate what is "Far"

The International Commission on Illumination (CIE)

Designation	
IR-A	700 nm–1400 nm (0.7 μm – 1.4 μm, 215 THz – 430 THz)
IR-B	1400 nm–3000 nm (1.4 μm – 3 μm, 100 THz – 215 THz)
IR-C	3000 nm–1 mm (3 μm – 1000 μm, 300 GHz – 100 THz)

ISO 20473 vs. Astronomers

	ISO 20473	Astronomers
Designation	Wavelength	Wavelength
Near Infrared (NIR)	0.78–3 μm	(0.7–1) to 5 μm
Mid Infrared (MIR)	3–50 μm	5 to (25–40) μm
Far Infrared (FIR)	50–1000 μm	(25–40) to (200–350) μm

Detector Response

Designation	Division based on Detector Response
Near infrared	0.7 to 1.0 μm
Short-wave infrared	1.0 to 3 μm
Mid-wave infrared	3 to 5 μm
Long-wave infrared	8 to 12, or 7 to 14 μm
Very-long wave infrared	12 to about 30 μm

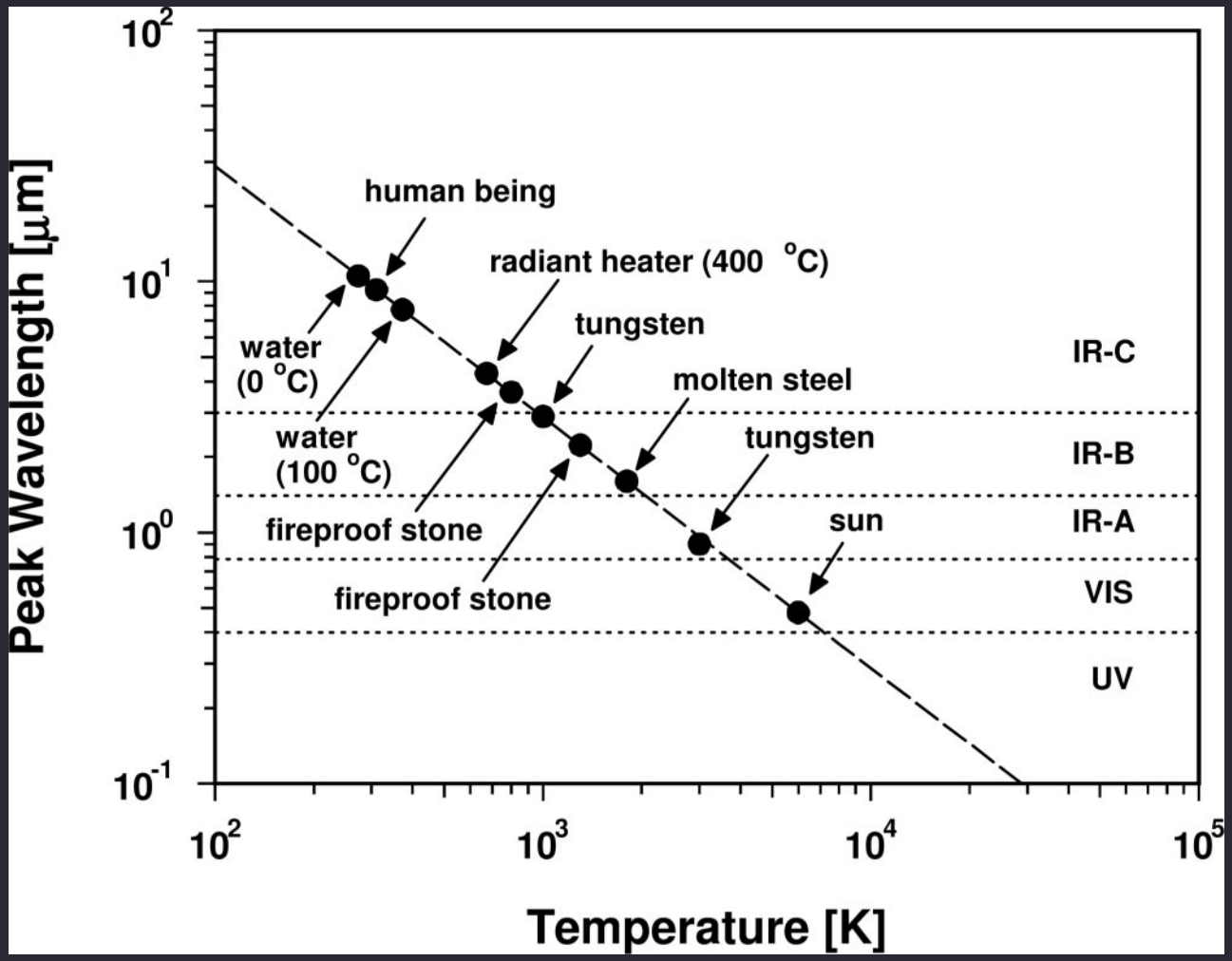
Infrared Radiation

- All materials with a temperature greater than absolute zero (-273 degrees Celsius) radiate energy in the far infrared region
- The higher the temperature, the higher radiation energy
- In general, the heat transfer moves from the higher temperature body to the lower temperature body

Infrared Radiation

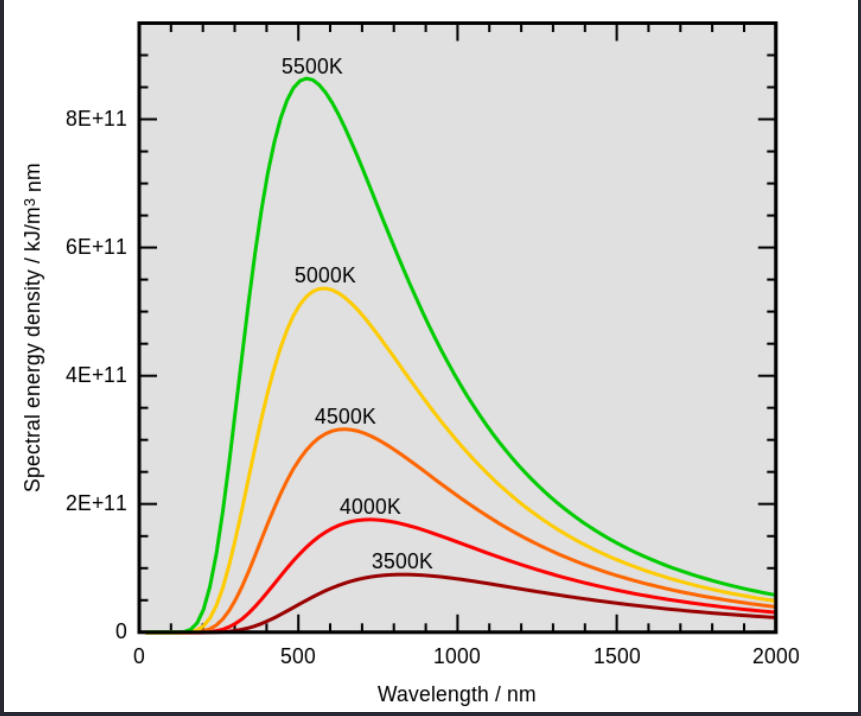
- The amount of radiation is also affected by type of material and the surface condition
- Ceramics radiate a lot of far infrared
- The radiation of far infrared is low in metal, however metal is a good reflector

Wavelength vs. Temperature



Wien's Displacement Law

$$\lambda_{max} = \frac{b}{T}$$



- λ = Black Body Radiation Peak Wavelength
- b = Wien's Displacement Constant
  - 2.8977729×10^{-3} m°K
  - 2,898 μm°K
- T = Absolute temperature in Kelvin

Human Infrared

$$\lambda_{max} = \frac{b}{T} = \frac{2{,}898\ \mu\text{m}^\circ\text{K}}{310^\circ\text{K}} = 9.35\ \mu\text{m}$$

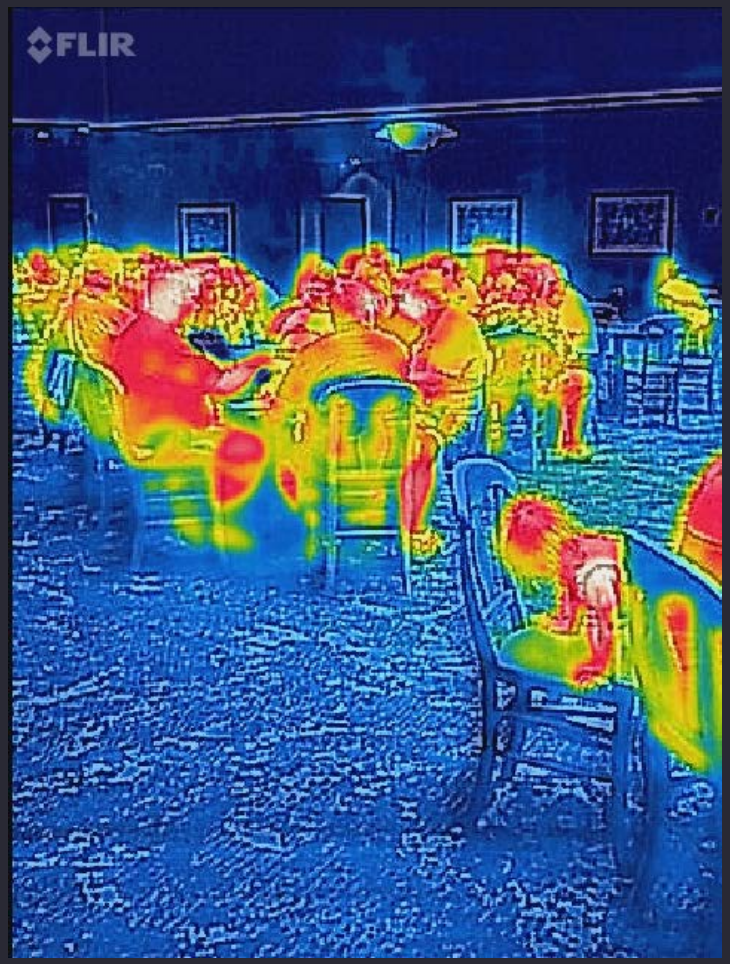
$$9.35\ \mu\text{m} \rightarrow 32\ \text{THz}$$

Note: 98.6 °F = 37 °C = 273 + 37 °K = 310 °K

Human Infrared

We are all flashlights

We are Flashlights

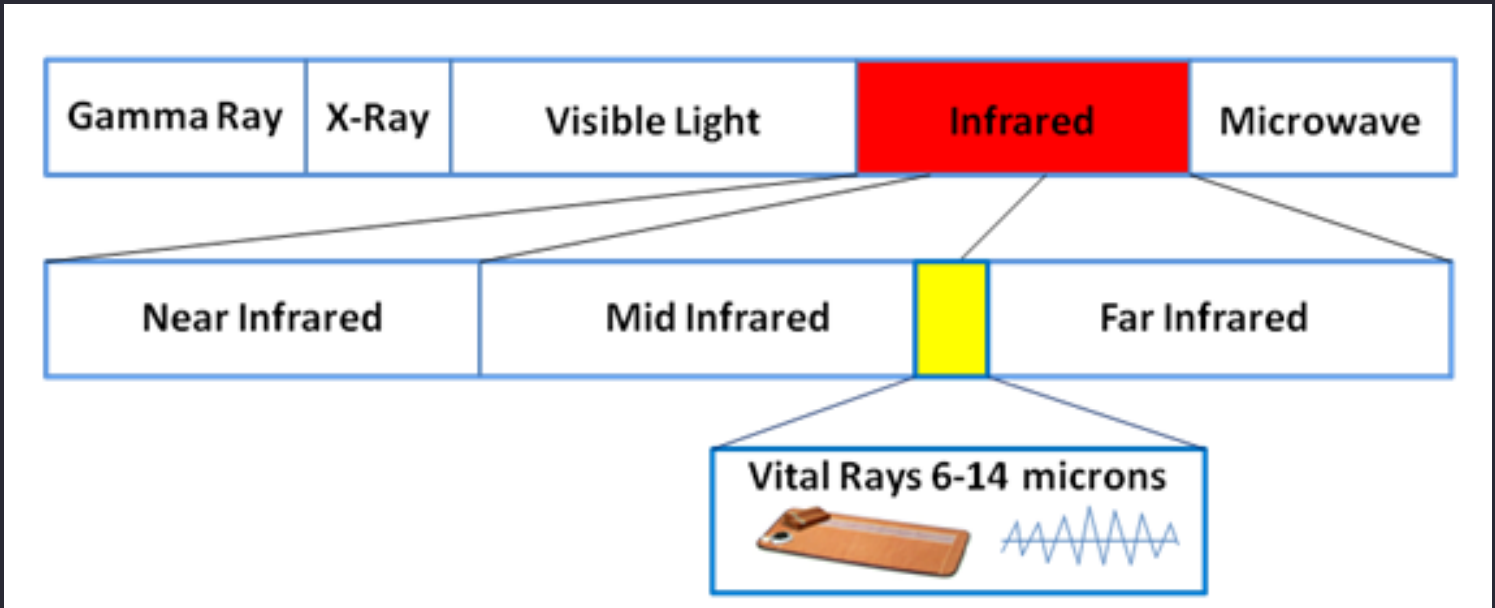


Human Infrared

- The human body both sends and receives infrared
- The body emits infrared wavelengths between 3 and 50 microns with the greatest output around 9.35 microns

Human Infrared

- Within the infrared spectrum, in the 6-14 micron range, are rays known as the "Vital Rays"
- These rays have been shown to be most beneficial to the body
- Between Mid Infrared and Far Infrared



Infrared Absorption

- Except for metal, most materials in our personal belongings, such as plastics, paints, textiles, wood, rubber, food and the human body, absorb electromagnetic waves from 2.5 μm to 30 μm.

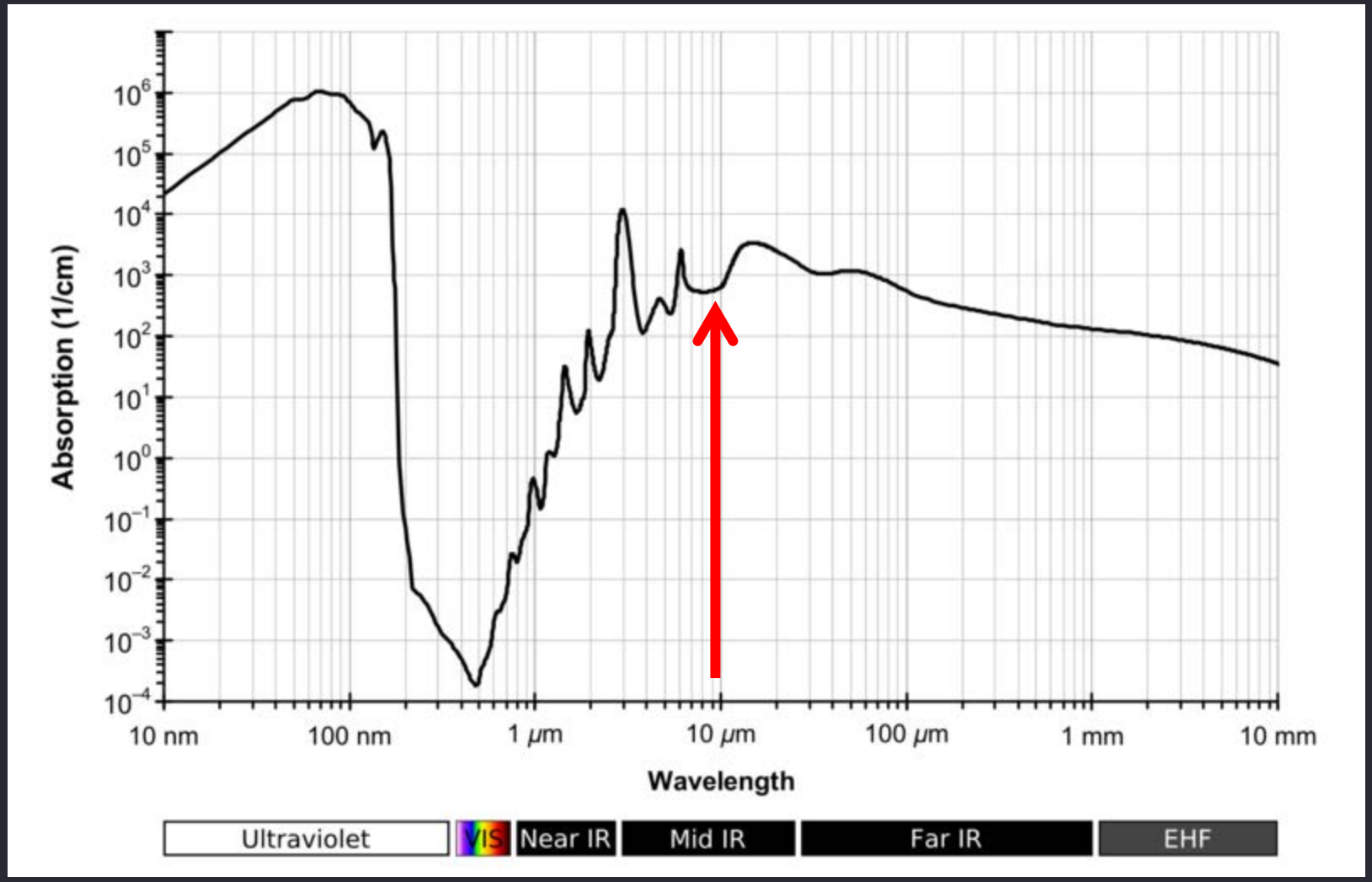
- The oxygen and nitrogen in air do not absorb far infrared rays, however, carbon dioxide (CO_2) and water vapor (H_2O) readily absorb far infrared rays

Human Body and Water

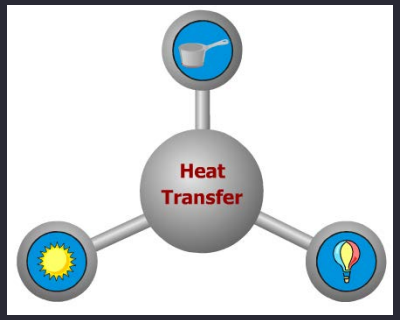
- Up to <u>90% of human body weight comes from water</u>

- Up to <u>60% of the human body volume is water</u>
  - Brain: 70% water
  - Lungs: 90% water
  - Lean muscle tissue: 75% water
  - Body fat: 10% water
  - Bone: 22% water
  - Blood: 83% water

Absorption Spectrum of Liquid Water



Heat Transfer – Three Types



- **Conduction:**
  - Heat transfer by direct contact between two objects
  - For example: stove cooking, or traditional heating pad

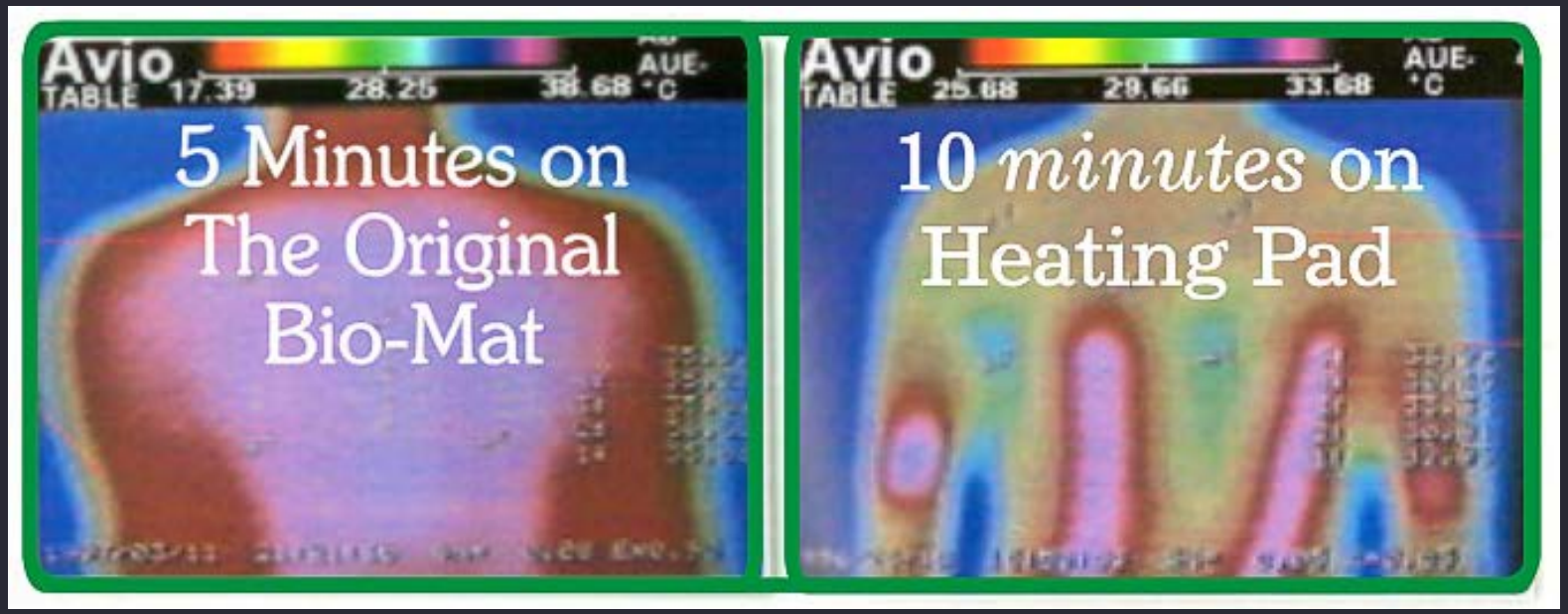
- **Convection:**
  - Heat transfer via a liquid or gas
  - Heated molecules of air or water physically bump into other molecules, and transfer some of their energy
  - For example, blowing air to cool something down

Infrared

- **Radiation:**
  - When electromagnetic waves travel through space, it is called radiation.
  - When electromagnetic waves contact an object, they transfer heat to that object.
  - Radiation heat transfer does not rely on any intermediary to conduct heat - it works directly on the molecules it encounters in its path. Because of this, it is highly efficient.
  - We get heat from the Sun through radiation heat transfer

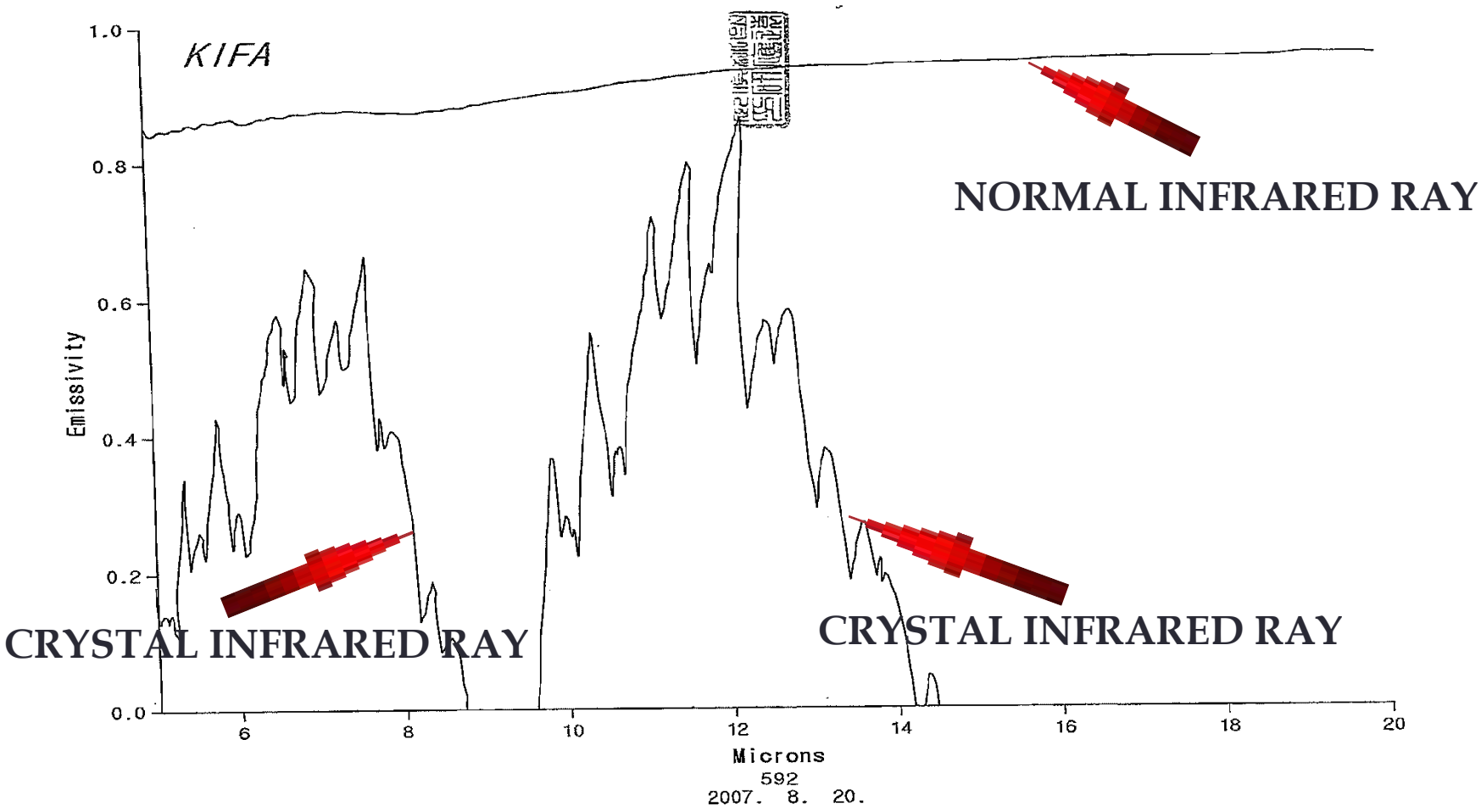
Campfire or a Naked Lady?

Conventional Heating Pad vs. Infrared Heating Pad



Mother's Touch – 6.5 Microns

Bio-Mat Crystal Infrared Ray



Healthiest Spectrum of Light?

- The spectrum of light that appears to be most resonant with cell tissues seems to lie within the <u>infrared spectrum</u>

Healthiest Spectrum of Light?

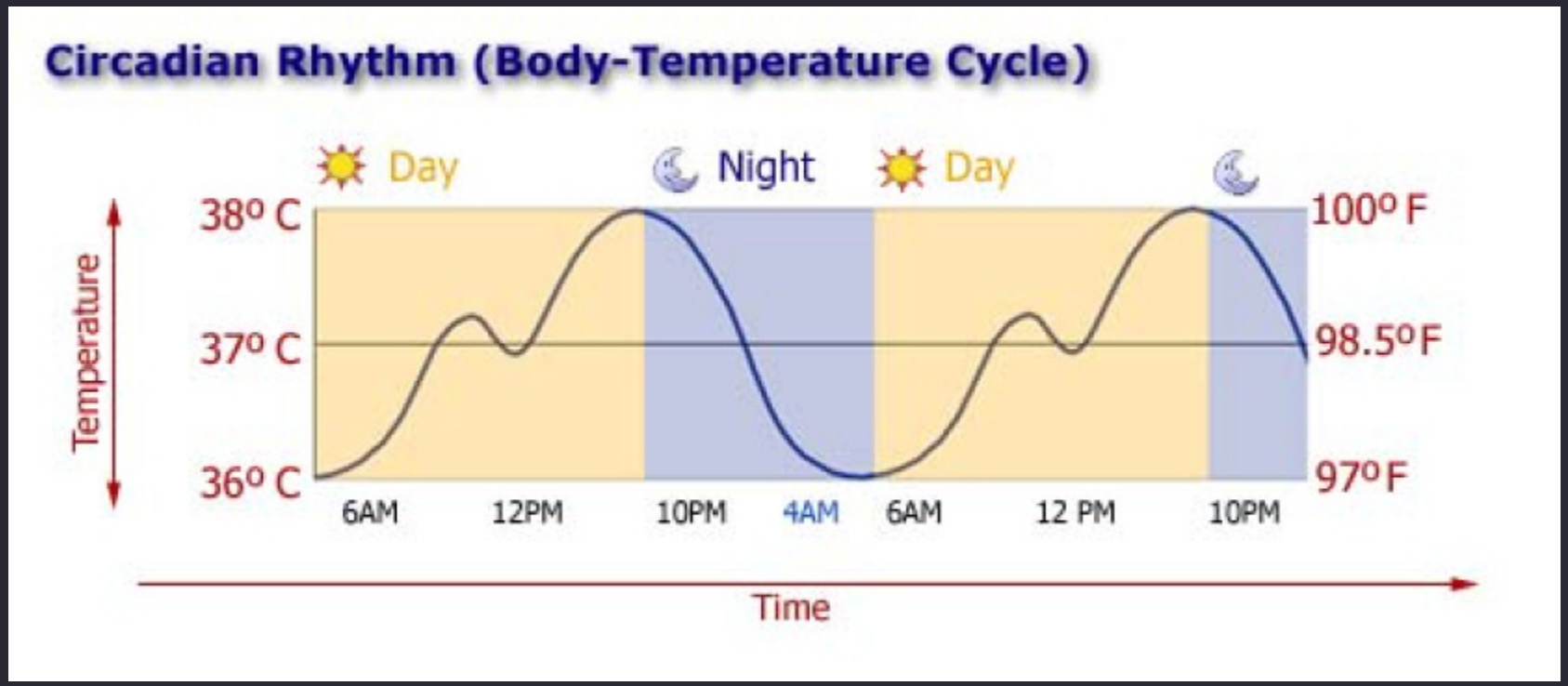
- Research performed by Tiina Karu, M.D., of the Laser Technology Center in Russia, holds that the infrared spectrum of light speeds up cellular metabolic processes, like stimulating the activity of mitochondria, and triggering enzyme activity as well as the healing, regeneration, and normalization of damaged cell tissue.

Body Temperature

The Myth of 98.6˚F

- Carl Reinhold August Wunderlich (1815-1877), took one million temperatures readings from 25,000 people and concluded the average/normal or mean temperature of healthy adults was 37.0°C (98.6°F)
- Normal temperature actually varies by race, sex, and other factors, and especially by time of day
- Average human temperature might be closer to 98.0°F, but this cannot really be said to be "normal"

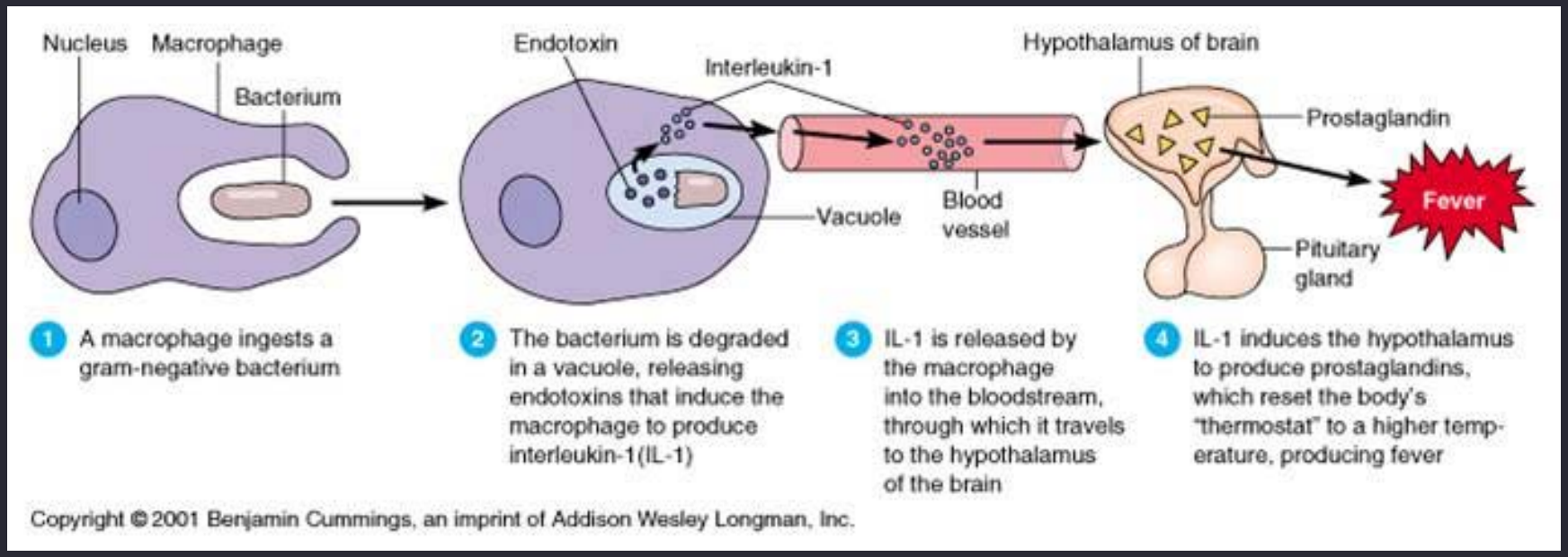
Body Temperature Varies Throughout the Day



Body Temperature and the Immune System

The Body Creates Fevers

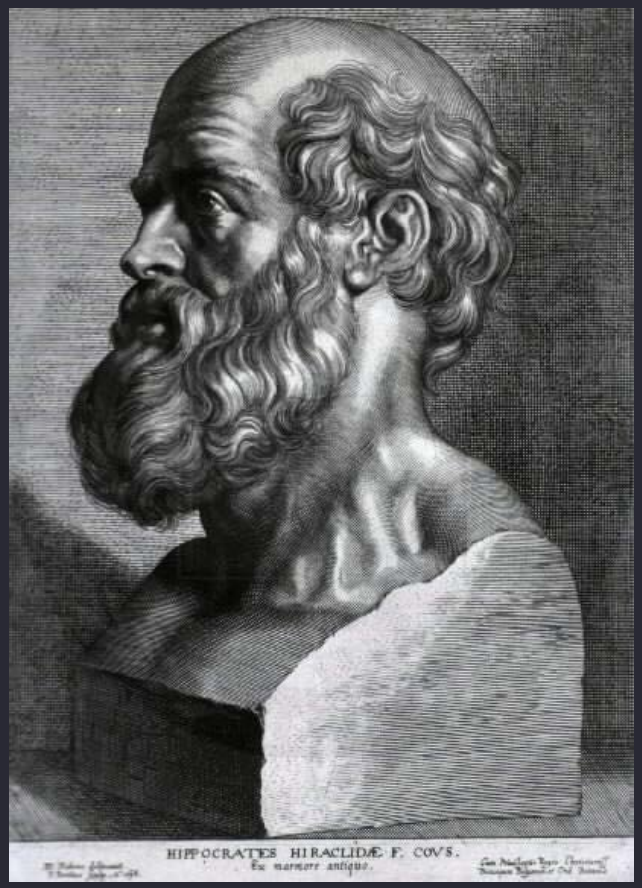
- Fever acts to slow down microbial metabolism while, at the same time, enhances immune cell function



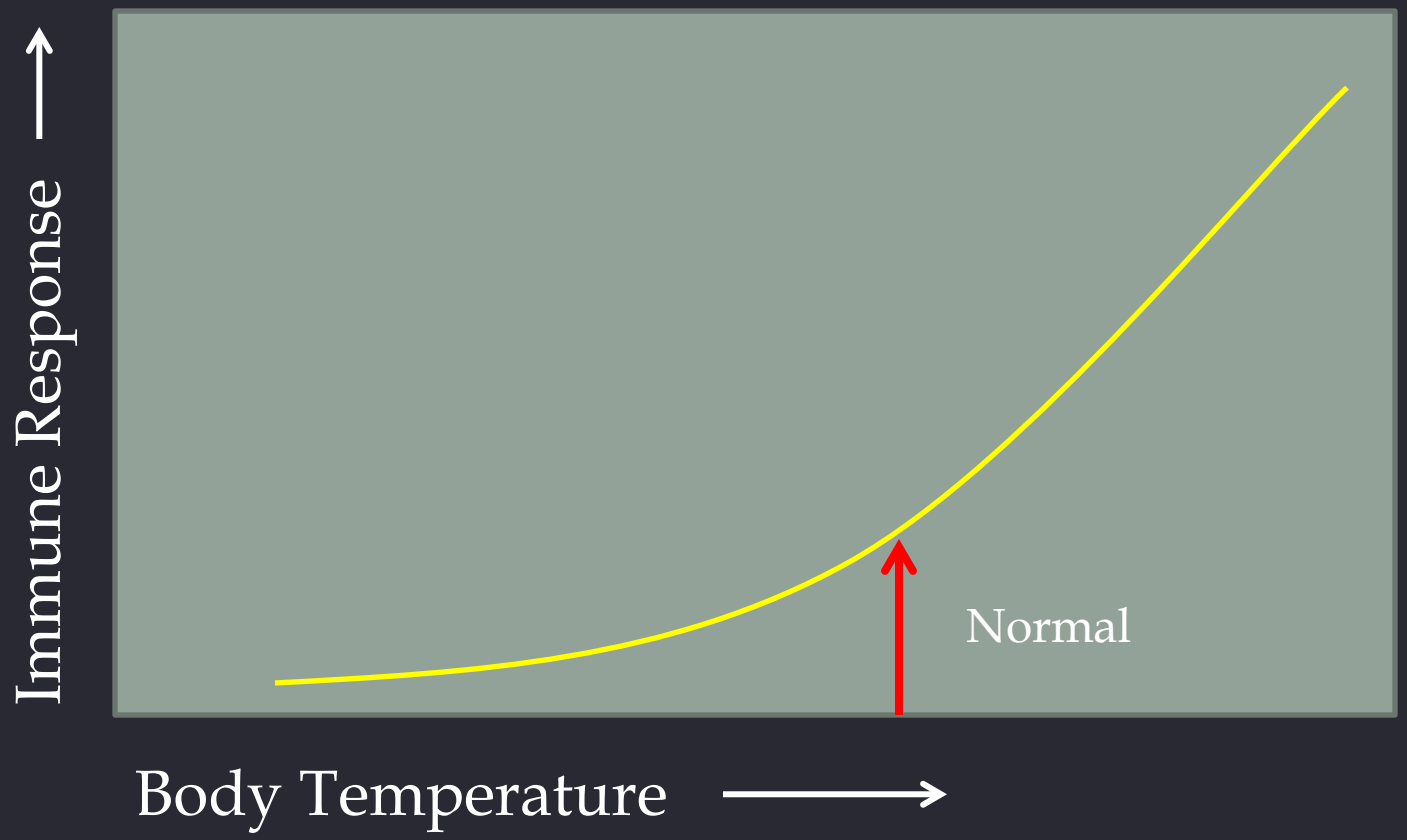
Raising Body Temperature

- The history of raising body temperature for therapeutic purposes can be traced back twenty three hundred years ago

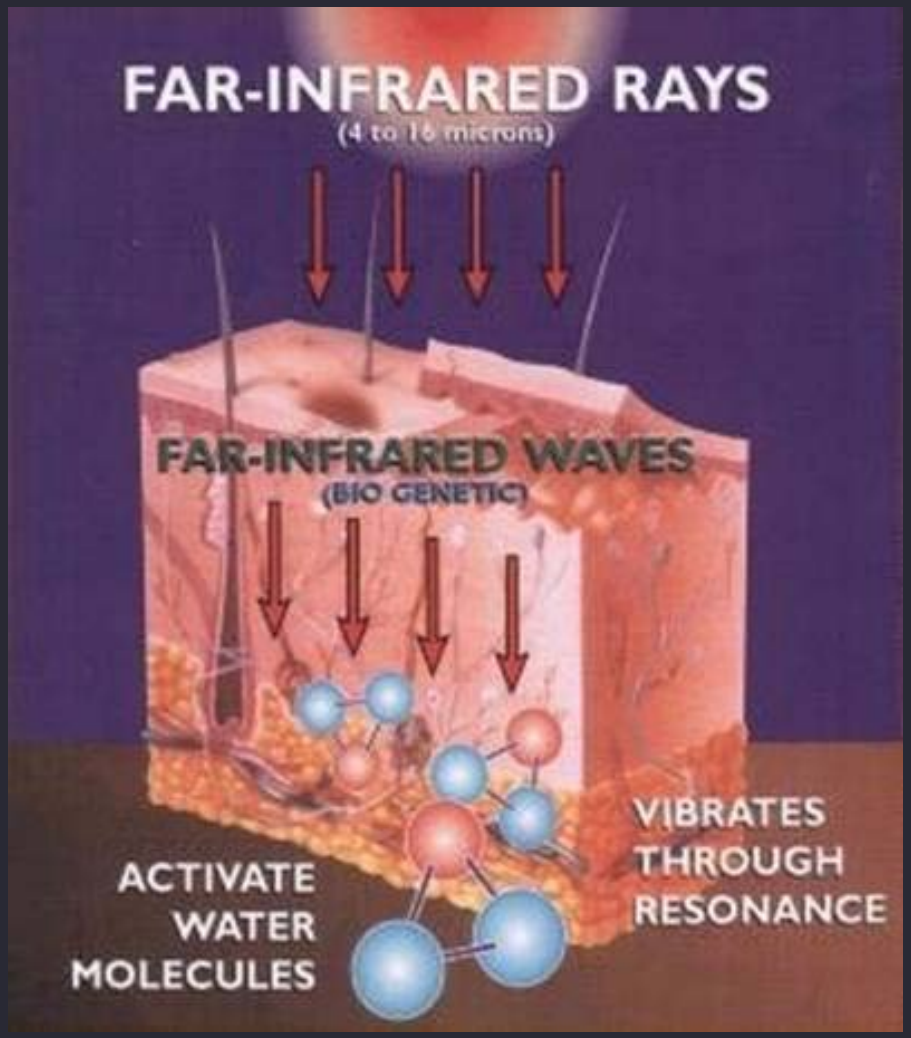
- "Give me the power to produce fever, and I will cure all disease."
  – Hippocrates (460 BC)



Body Temperature vs. Immune Response



Infrared Raises Body Temperature



Temperature Change

- Professor Abo (Japan)
  - Our immune functions are improved by 40% when we increase our body temperature by 1°C (1.8°F)
- Ishihara Yumi, PhD (Japan)
  - Body temperature raised 1°C above normal increases immunity 5-6 times
  - Body temperature dropped 1°C decreases immunity 30%
  - Claims the average Japanese body temperature has declined 0.5°C (0.9°F) in the last 50 years

Temperature Change

- Professor Hiromi Shinya, PhD (Albert Einstein College of Medicine, NY)
  - When the body temperature drops 0.5°C, the enzymes in the body become less active and the immunity decreases by about 30%
  - The body temperature at which cancer cells can multiply more easily is around 35°C (95°F)
  - Enzymes work more actively in higher body temperature

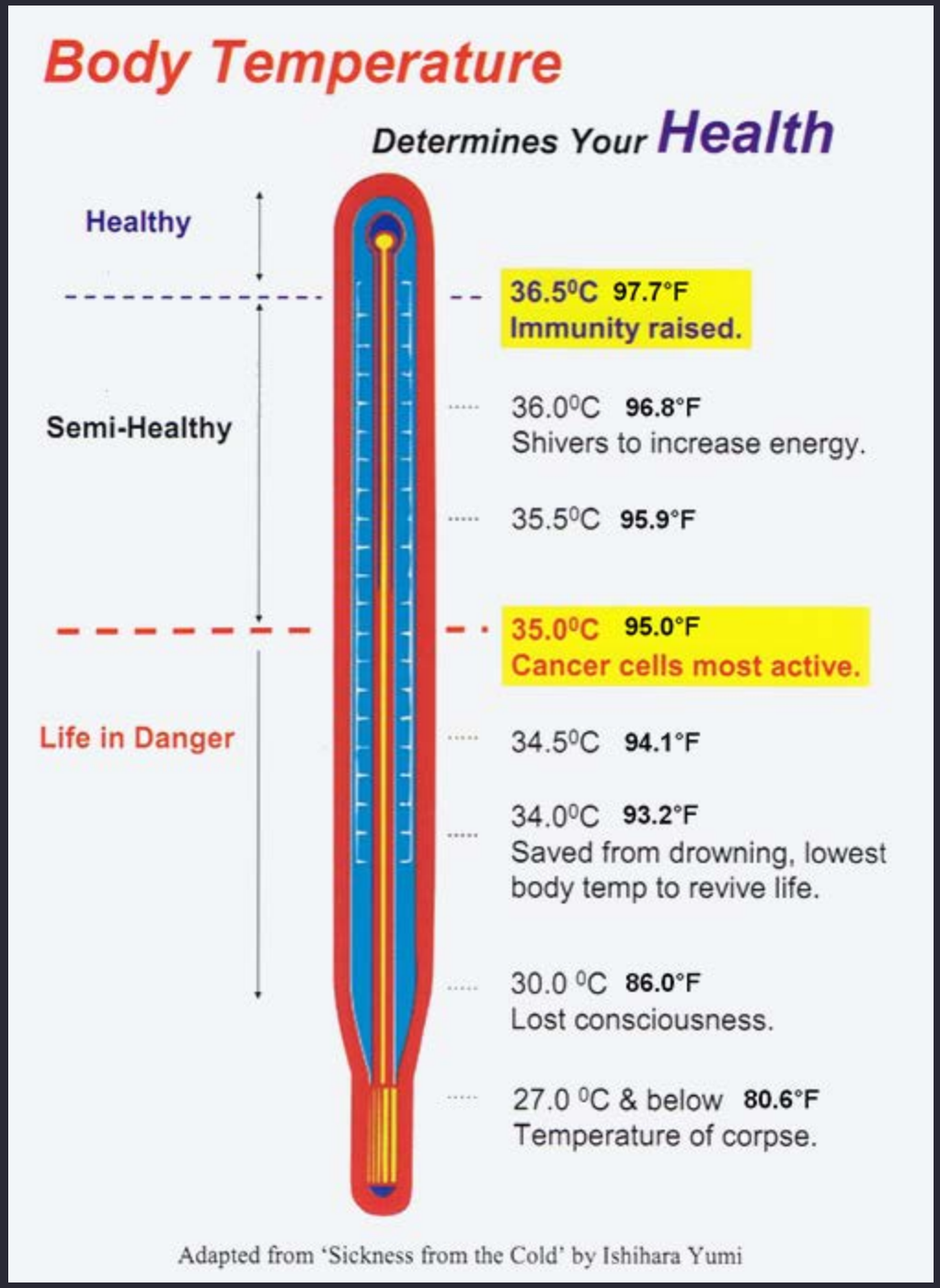
Low Body Temperature Syndrome

- Professor Hiromi Shinya, PhD (cont.)
  - People with low body temperature have:
    - Poor immunity
    - Poor blood circulation
    - Prone to bad gene mutation and hence cancer
  - More and more people are suffering from "low body temperature syndrome"

Low Body Temperature

- Ma Yueling (Well-known Physician in China)
  - When body temperature falls below 35°C (95°F), the chance of death is about 30%
  - Low body temperature
    - Results in a drop of blood production
    - Affects the growth of young children
    - Results in the hardening of the arteries
    - Arteries contract and the layer of cholesterol within them hardens
    - Increases the chances of suffering from cancer

Low Temperature Syndrome



Immune Function and Temperature

- Scientists found that the generation and differentiation of a particular kind of lymphocyte, known as a "CD8+ cytotoxic T-cell" (capable of destroying virus-infected cells and tumor cells) is enhanced by mild fever-range hyperthermia. Specifically, their research suggests that elevated body temperature changes the T-cells' membranes which may help mediate the effects of micro-environmental temperature on cell function.

  – November 2011 issue of the *Journal of Leukocyte Biology*

Young

- Very young are limited in their ability to regulate body temperature when exposed to environmental extremes
- A newborn infant's body temperature decreases if the infant is exposed to a cool environment for a long period
- Heat loss mechanisms are not fully developed in the newborn

Elderly

- Elderly people are often limited in their ability to regulate body temperature when exposed to environmental extremes
- Elderly people also are not able to produce enough heat to maintain body temperature in a cool environment
- The elderly do not lose as much heat from their skin as do younger people

Infrared Therapy

Japan Far Infrared Rays Association

遠赤外線 非営利 一般社団法人 遠赤外線協会
Japan Far Infared Rays Association (JIRA)

Japan Far Infrared Rays Association (JIRA) was established in 1992 to contribute for the progress of society and the quality of life through our activities such as protection of well-being of consumers and promotion of far infrared (FIR) related industries. JIRA is the only charitable organization in the fields of FIR.

- Society of medical practitioners and researchers dedicated to furthering infrared therapy
- Mission
  - To protect well-being of consumers through deep understandings of FIR technologies, related products and markets
  - To promote FIR related industries with steady progress

Infrared Therapy

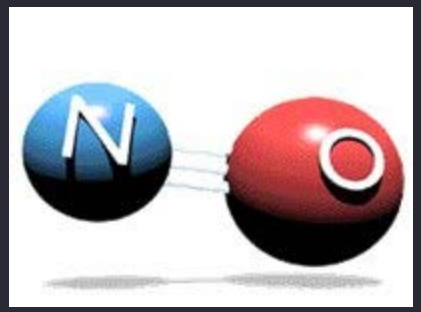
- Far Infrared therapy increases blood circulation and oxygen supply to damaged tissues (aiding reduction of chronic joint and muscle pain or sport injuries), promotes relaxation and comfort, induces sleep and relieves stress

Improves Circulation & Cardiovascular Function

- FIR waves raise the body temperature warming the blood and expanding the blood vessels
- There is an increase in peripheral blood flow and volume, resulting in improved circulation and heart function

Increased Nitric Oxide

- Nitric oxide was named "Molecule of the Year" in 1992 by the journal "Science"
- "Far-infrared radiation acutely increases nitric oxide production"
- The release of nitric oxide enhances blood flow in the immediate vicinity
- Nitric oxide relaxes smooth muscle cells, resulting in vasodilatation



Improves Immune System Function

- FIR ray's deep heat raises your body temperature inducing an artificial and healthy fever
- As the body works to combat the "fever," your body's immune system is activated and strengthened
- Combined with the detoxification of harmful toxins and waste products, your overall health and resistance to disease is greatly improved

Relieves Pain

- The deep heat of the far infrared helps peripheral blood vessels dilate, bringing relief and healing to muscles and soft tissue injuries

- Increased blood circulation carries off metabolic waste products and delivers oxygen rich blood to oxygen depleted muscles, so they recover faster

Burns Calories and Controls Weight

- As you relax in the gentle heat of the far infrared, you body is actually hard at work, producing sweat, pumping blood and burning calories

- According to a Journal of the American Medical Association report, a single far infrared session burns as many calories as rowing or jogging for 30 minutes

Eases Joint Pain and Stiffness

- FIR heat therapy is widely used to treat patients suffering from many kinds of arthritis and musculoskeletal disorders
- In addition, it has been proved effective in the treatment of sprains, neuralgia, bursitis, muscle spasms, joint stiffness and many other musculoskeletal ailments
- Stiffness, aches and soreness that come with aging are reduced or eliminated using FIR

Reduces Stress and Fatigue

- The gentle warmth of the far infrared rays helps to sooth nerves and relaxes tight or knotted muscles

- The end result is reduced stress and improved energy

Improves Skin

- FIR penetrates deep into the skin, helping detoxify the skin and lymph
- Greatly enhances exfoliation, rapidly remove dead skin cells
- Increased circulation draws your skin's own natural nutrients to the surface, rejuvenating your skin's health and appearance

Removes Bodily Toxins and Assists in Detoxification

- Increased blood circulation stimulates the sweat glands, releasing built up toxins and waste
- Daily sweating can help detoxify your body as it rids itself of an accumulation of potentially carcinogenic heavy metals, alcohol, nicotine, sodium, sulfuric acid, cholesterol, and uric acid
- In addition to sweating, far infrared is capable of removing toxins via several other bodily systems

Elevates the Mood

- Infrared treatment can release serotonin, creating a better sense of well-being

Heart Attacks

- "The most dangerous times for heart attack and for all kinds of cardiovascular emergency — including sudden cardiac death, rupture or aneurysm of the aorta, pulmonary embolism and stroke — are the morning and during the last phase of sleep. A group from Harvard estimated this risk and evaluated that on average, the extra risk of having a myocardial infarction, or heart attack, between 6 a.m. and noon is about 40%. But if you calculate only the first three hours after waking, this relative risk is threefold."
- When someone sleeps on the Bio-Mat, the core temperature is raised overnight, so the body temperature does not follow the normal pattern

Cardiac Enhancement

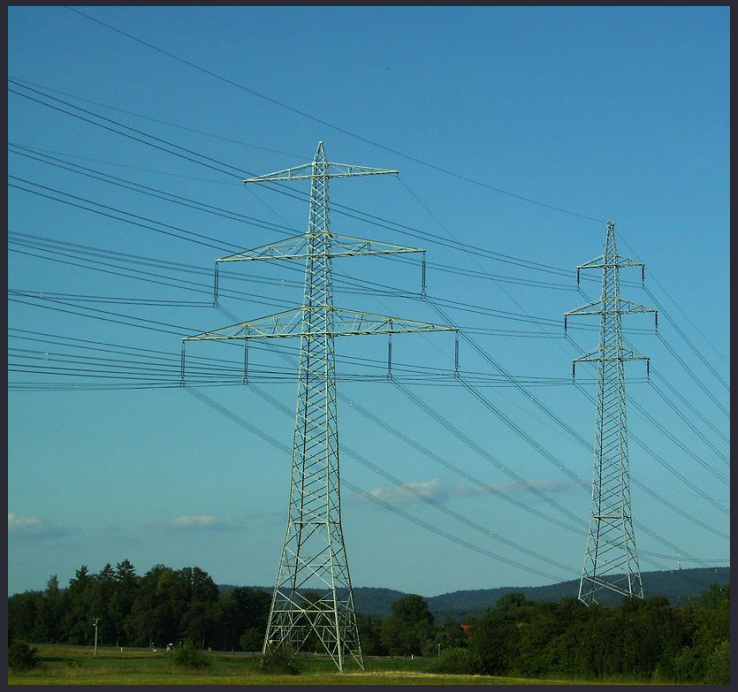
- German medical researchers concluded one session of far infrared therapy for over 1 hour can have significant reduction of blood pressure thanks to persistent peripheral vessels dilation. They also noted that blood viscosity was improved.
- After 1 hour of far infrared radiance, there is a significant decrease of blood pressure - cardiac ejection resistance - total peripheral resistance - and significant increase of heart rate, stroke volume, cardiac output, and ejection fraction.

Sunburn

- According to the Clayton's Electrotherapy, 9th Edition, far infrared radiation is the only antidote to excessive ultraviolet radiation

Reduction of Electromagnetic Stress

- Japanese researchers have reported that far infrared radiant heat is an antidote to the negative effects of toxic electromagnetic fields



Cancer and Infrared

Low Body Temperature

- "One of the very common findings that I have noticed in cancer suffers is a low body temperature, or at least a dysregulated distribution of temperature in the body."
  - David A. Jernigan, DC, BS
    (Townsend Letter, November 2012)

Cancer

- The first documented case of using heat to treat cancer systematically was in Germany in 1965, by Dr. Aldin. He used a light anesthesia and a 45°C (113°F) hot tub.

National Cancer Institute

- Hyperthermia is a type of cancer treatment in which body tissue is exposed to high temperatures (up to 113°F) to damage and kill cancer cells.
- Hyperthermia is almost always used with other forms of cancer therapy, such as radiation therapy and chemotherapy.
- Several methods of hyperthermia are currently under study, including local, regional, and whole-body hyperthermia.
- Many clinical trials (research studies) are being conducted to evaluate the effectiveness of hyperthermia.

NIH NATIONAL CANCER INSTITUTE

National Cancer Institute

- Hyperthermia (also called thermal therapy or thermotherapy) is a type of cancer treatment in which body tissue is exposed to high temperatures (up to 113°F). Research has shown that high temperatures can damage and kill cancer cells, usually with minimal injury to normal tissues. By killing cancer cells and damaging proteins and structures within cells, hyperthermia may shrink tumors.

- Hyperthermia is under study in clinical trials (research studies with people) and is not widely available

NIH NATIONAL CANCER INSTITUTE

National Cancer Institute

- Hyperthermia is almost always used with other forms of cancer therapy, such as radiation therapy and chemotherapy. Hyperthermia may make some cancer cells more sensitive to radiation or harm other cancer cells that radiation cannot damage. When hyperthermia and radiation therapy are combined, they are often given within an hour of each other. Hyperthermia can also enhance the effects of certain anticancer drugs.

NIH NATIONAL CANCER INSTITUTE

The Fourth Treatment for Medical Refugees

Online at: www.bio-mats.com

Thermotherapy

It is well known that cancer cells are heat-sensitive.

Since there is a low blood flow within the tumor mass, its temperature can be easily increased. Since the normal cells surrounding the tumor mass have a thermostatic function, their temperature will not be increased as much as the cancer cells.

When the tumor mass is at 42°C, it will become inactive. However, since a normal cell's temperature is limited up to 40°C due to the cooling effects of blood flow, they will not be as affected as the tumor cells. . . . When the temperature is increased to more than 42°C, cancer cells are more likely to die naturally

- THE FOURTH TREATMENT FOR MEDICAL REFUGEES
  THERMOTHERAPY IN THE NEW CENTURY
  by Nakamachi Nobuhiro Yoshimizu, M.D., Ph.D., Garden Clinic Director

Heat Shock Proteins

- Tumor cells are invisible to the immune system, but this can change under the influence of heat
- Thermal stress produces "heat shock proteins" (HSP), which appear on the surface of the degenerated cells
- The body's own immune system detects these proteins as extraneous cells, giving a clear indication for the immune cells to fight the cancer cells

HSP/Endorphins

- In order for our body to prevent HSP secretions and allow it to recover, our brain actively secretes hormones called endorphins. People sometimes feel happy when they run or exercise. Such effects have to do with the endorphin that provides happy emotions and relives pain.

- Therefore, we <u>believe that when we perform thermotherapy on patients, endorphins are secreted to protect our patient's body from pain</u>. Eighty percent of cancer patients are prescribed morphine to control their pain. However, in thermotherapy, we may proceed with the cancer treatment without any use of morphine.

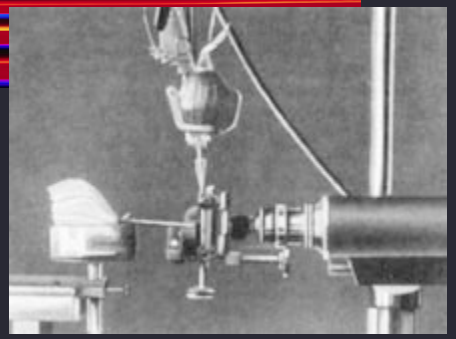
- Nakamachi Nobuhiro Yoshimizu, M.D., Ph.D.

Hyperthermia

- Basic research since the 1970s has verified that temperatures above 39.5°C damage tumor cells, destroying them or impeding their growth.
- Overheating tumor cells causes a lack of oxygen. This results in over-acidification of the heated cells and a lack of nutrients in the tumor. The cell metabolism is destroyed, resulting in cell death (apoptosis) of the tumor cells.

INFRARED AS AN INFORMATION CARRIER

Biophotons

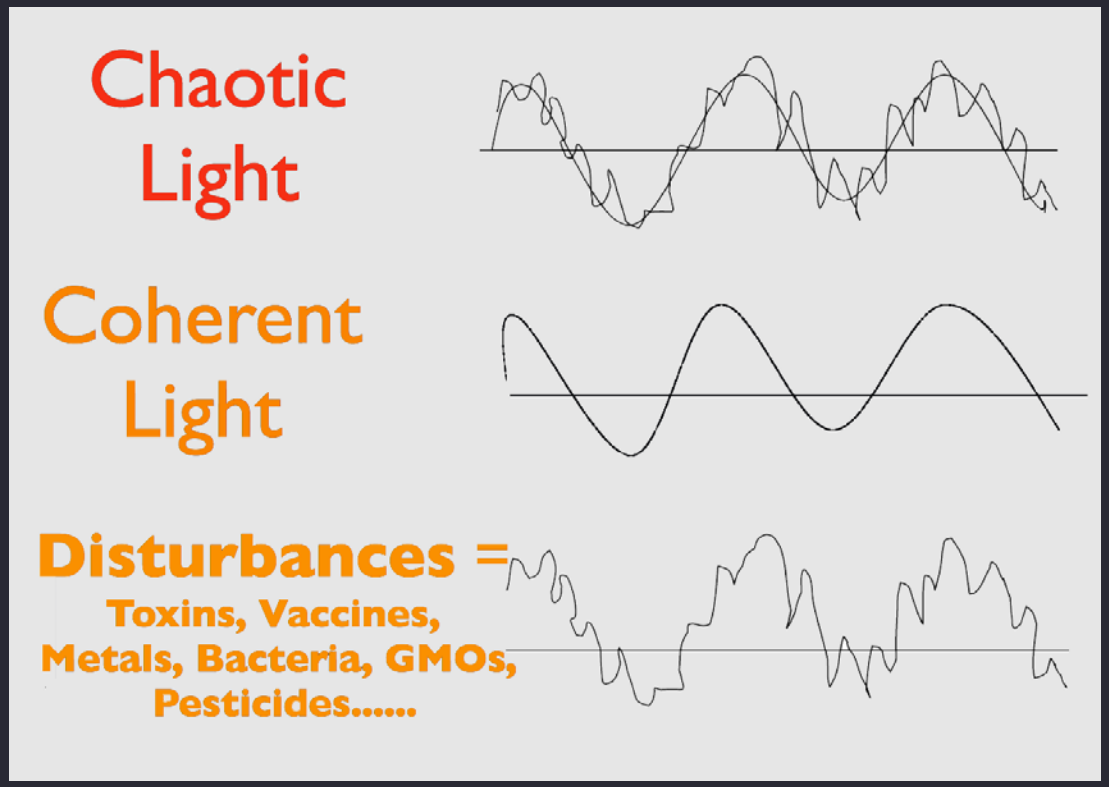


- 1922 - Alexander G. Gurwitsch, experiments with onion roots
- 1982 - Fritz-Albert Popp, developed biophoton theory, coined the term biophotons

- Biophotons are coherent photons, emitted from biological organisms, that transmit information

Biophotons

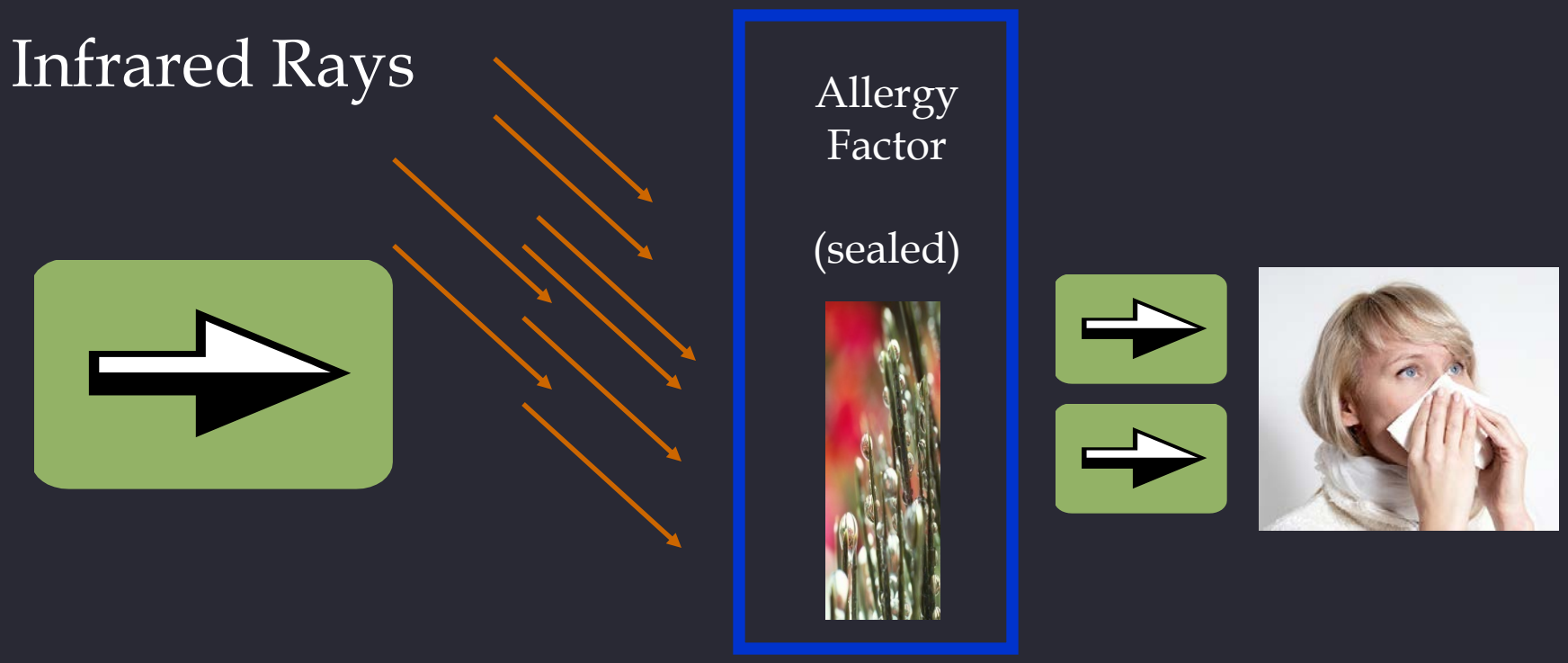
- Living organisms send and receive information via light



Allergies and Biophoton-Information

- Allergies may not be a **Chemical** reaction but a **Biophoton Information** reaction

Infrared Allergy-Factor Transmission Experiments



Blocking transmission ceased allergy symptoms

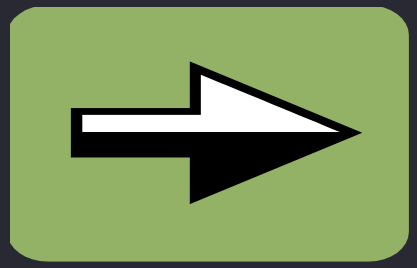
More Dramatic Biophoton Test

- **Dr. Chiang Kanzhen**:
  The electromagnetic vibration pattern of one living organism can be transmitted to cause physical changes in another living organism

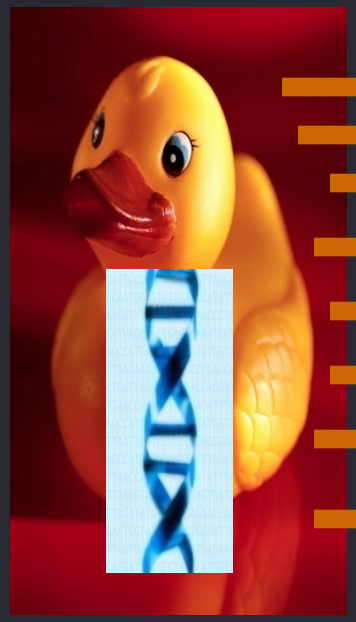
- 90% DNA, while generally considered junk, may actually be involved in communication via light

Biophoton – DNA Transfer

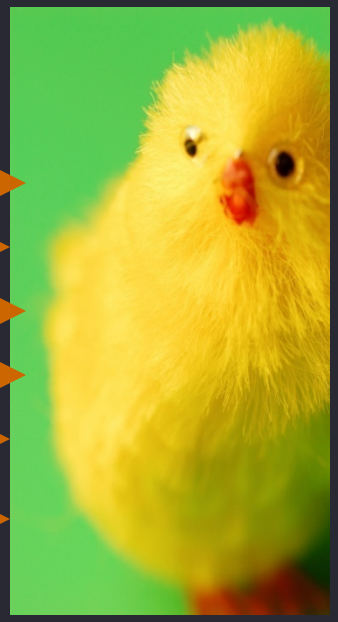
Dr. Chian Kanzehn invented a
DNA Information Transfer Device



Infrared Rays Shooting
Biophotons



Duck DNA



Chicken Eggs

Duck-Chickens

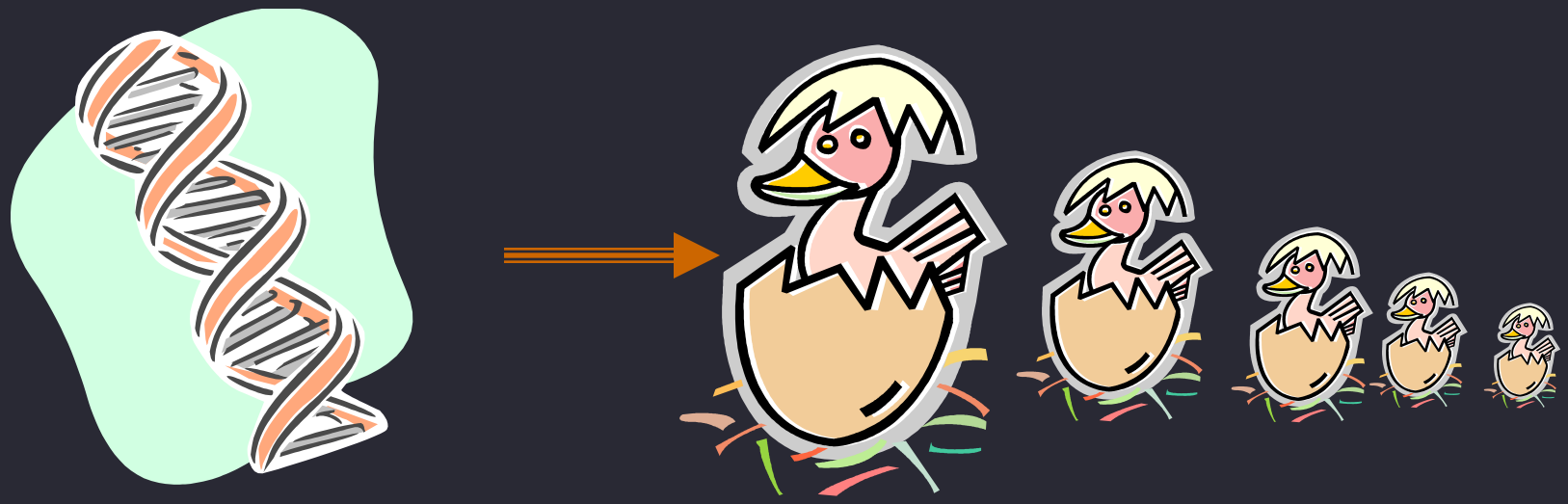
Chickens change to Duck-Chickens

Chickens change Duck-Chickens

- Tested 480 Chickens
- 25% Feet changed like Duck Feet
- 80% Head changed like Duck head
- 70% Neck longer
- 90% Eyes change like Duck Eyes

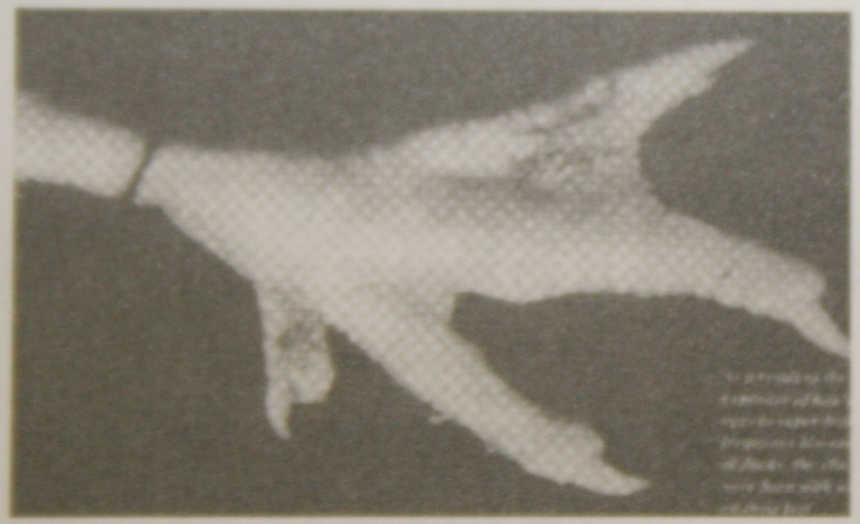
Changed DNA affected subsequent Generations

- Duck-Chicken's next Generation became same **Duck-Chicken**



Duck-Chicken Picture

Duck-Chicken Hybrid



〈 생체정보전사에 의해 오리의 물칼퀴가 생긴 닭의 발 〉

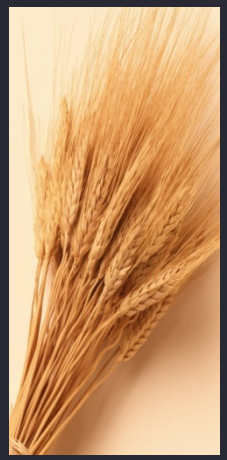
〈 오리 · 닭 하이브리드 〉

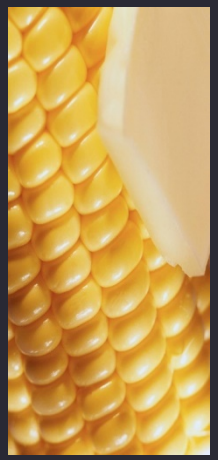
Duck-Chicken Picture

Duck-Chicken Picture

Tested Wheat-Corn

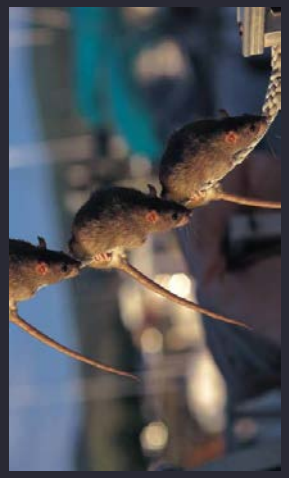
- Light passed through wheat DNA into corn
- Super Wheat-Corn increased 300% in Size
- Changed DNA continued to next Generation
- Much Stronger than Normal Corn



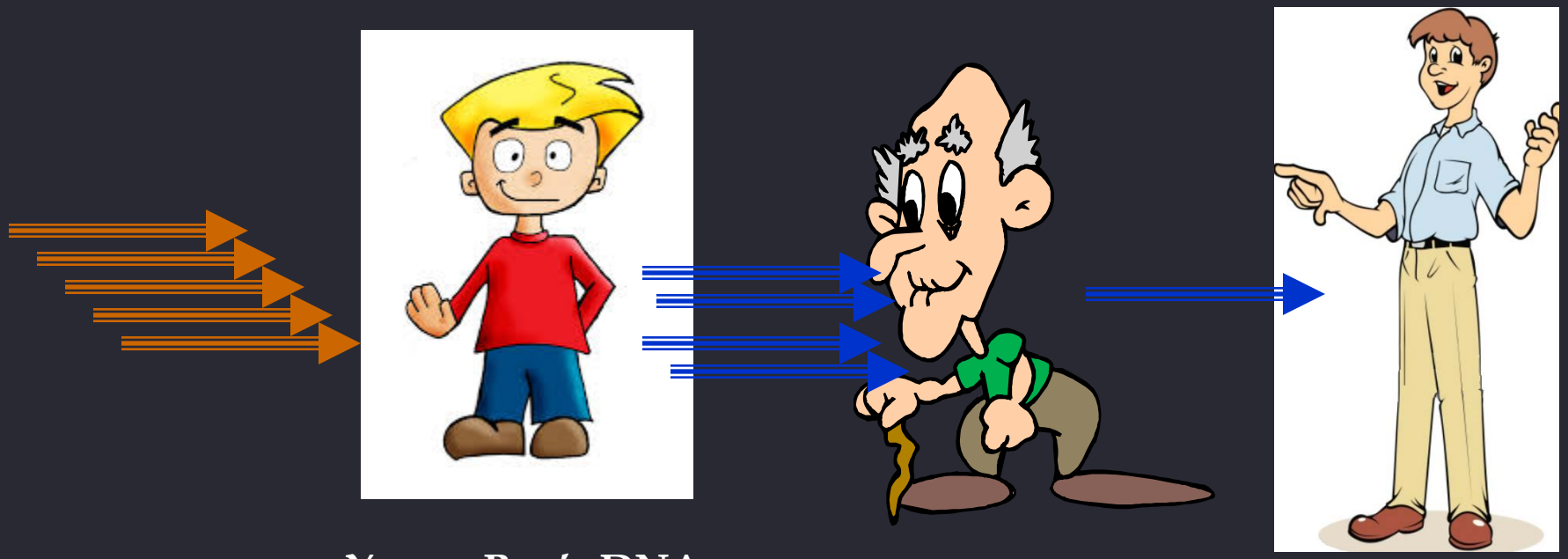


Tested Cancer

- Rabbits do not get a specific form of cancer
- Infrared passed through rabbit DNA onto mice
- 300 Mice with induced cancer
  - Control: 100% died
  - Infrared through DNA: 70% lived
- Infrared is an information carrier



Young boy DNA transmission to 83 year old Father

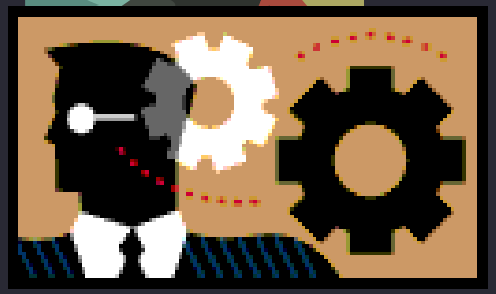


Young Boy's DNA

20 Years getting younger

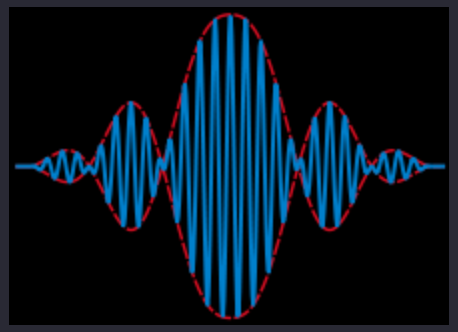
His Father Changed

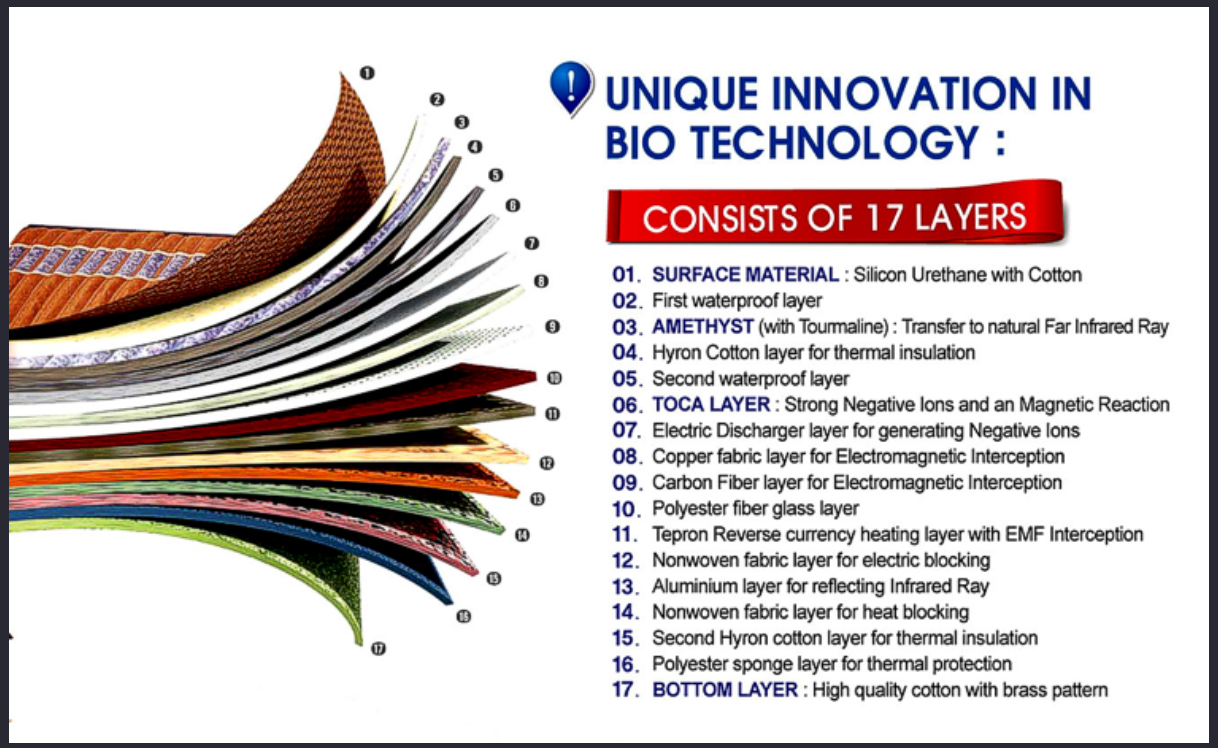
- His hearing improved
- His tumor disappeared
- His hair change to Black
- His new teeth are growing again



Infrared Through Crystals

- Crystals modulate infrared waves





Amethyst Crystals

Transfer High Quality Infrared Ray with natural information

Crystal Infrared

- Infrared acts as an information carrier when passed through various materials, including human and animal DNA, pheromones, as well as gemstones such as amethyst

- Research concluded that infrared alone was not as effective for healing as infrared passed through amethyst

- As one Korean research scientist said, "It appears that with infrared we are talking about energy, but with the addition of amethyst, we are now talking about energy plus healing information"

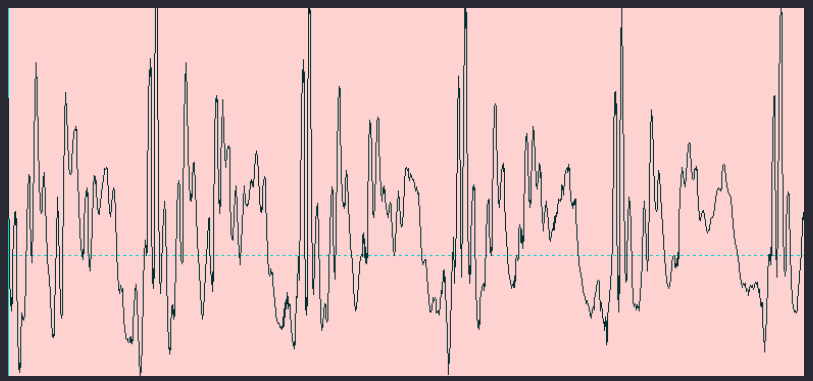
Bio-Mat vs Bio-Belt

Amethyst

Amethyst, Tourmaline, Green Jade, Citrine, Topaz, Tiger Eye, and Elvan

Beyond Frequencies

- Various technologies focus on specific frequencies to deliver healing
- The future may hold more and more the use of frequency patterns to deliver healing



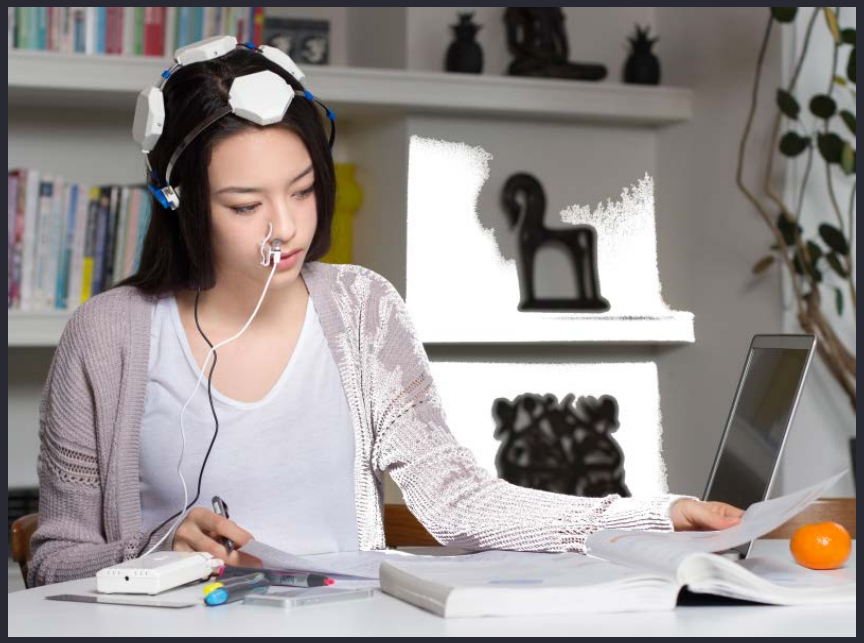
Infrared Technologies

Infrared Technologies

Alzheimer's Disease

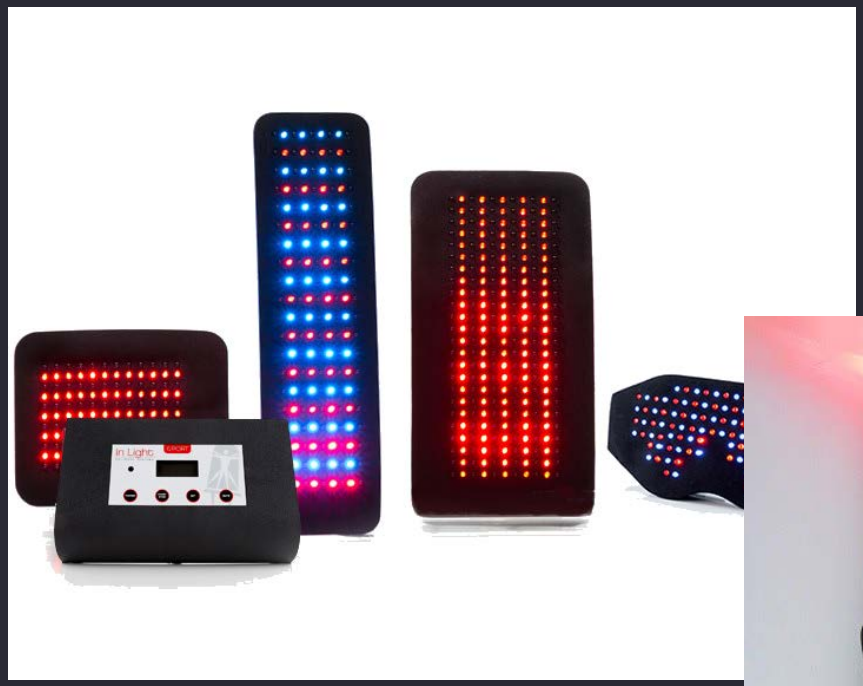
- Various devices have been under investigation
- Wavelengths from 810-1070nm infrared

The Vielight Neuro



- Transcranial-intranasal brain photobiomodulation system
- Pulsed near infrared light, 810nm, 10Hz pulse

LED Systems



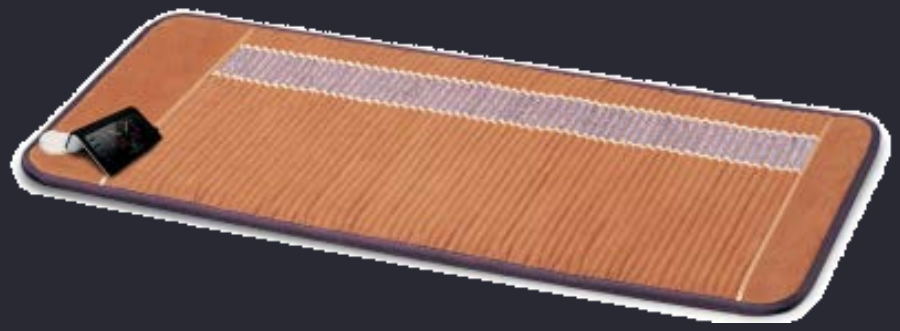
- Pulsed visible and infrared LEDs

AVACEN 100

- AVACEN is an acronym for Advanced Vascular Circulation Enhancement
- Heats one hand in a vacuum to increase core body temperature

Bio-Mat

- The FDA 510k indications for use states:
  - "Temporary relief of minor muscle pain, minor joint pain and stiffness, joint pain associated with arthritis, muscle spasms, minor sprains, minor strains, minor muscular back pain, relaxation of muscles, and temporary increase of local circulation where applied."



Conclusions

- We continue to better understand how infrared can be used to assist the body to achieve a higher state of health and vitality
- Infrared healing technologies are rapidly advancing with continual research in both the alternative and mainstream medical worlds
- Infrared healing technology is in your future