

# The Relationship and Treatment of Autoimmune Diseases, Particularly Thyroid Diseases, with Stress: Bio-robotic Resonance and Thermodynamical Interaction with Analogy of Frequency-Resonance Setting Formation Method and the Use of the 5<sup>th</sup> Law of Thermodynamics within the Scope of ELMAS's Theory of Thermodynamics and ELMAS's Equation

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## Abstract

*Within the framework of Elmas's Theory of Thermodynamics, aging and autoimmune disorders are explained as a decrease in a system's (the human body's) capacity for energy management and regulation (negative entropy). According to this theory, both processes are based on "entropy accumulation" and "matter-energy imbalance at cellular boundaries."*

Here are the detailed mechanisms of these processes

### The Aging Process: An "Entropy Accumulation" Mechanism

According to this theory, aging occurs when the rate at which the body converts energy from its environment into structural order lags behind the rate of natural disorder (entropy).

- **Genomic Entropy:** Errors occurring in DNA during cell division and metabolic processes are seen as "information loss." According to the theory, this is an increase in disorder (genomic entropy) in the system's genetic information and leads to impaired organ function.
- **Loss of Energy Efficiency:** In an aging system, the process of producing energy from nutrients (oxidative phosphorylation) becomes inefficient. More "waste heat" is produced, and this heat damages cellular structures. This situation is an inevitable step towards thermodynamic equilibrium (death).
- **Cellular Boundary Permeability:** In Elmas's theory, body cells are described as an open thermodynamic system. Aging is the weakening of the "vector forces" that enable the transfer of matter and energy across these cellular boundaries.

### Autoimmune Disorders: "Systemic Error and Misdirection of Energy"

Autoimmunity begins with the immune system perceiving its own tissues as "foreign" (high entropy/disordered).

- **Thermodynamic Collapse of Self-Tolerance:** In a healthy system, immune cells distinguish between "self" and "non-self" through a low-entropy information processing process. In autoimmunity, this information processing mechanism breaks down; the system sees its own healthy tissues as a disorder that needs to be destroyed.
- **Self-Feeding Energy Cycle (Inflammation):** Autoimmune reactions create a continuous energy consumption (chronic inflammation) in the body. This situation increases the amount of heat and waste



**Keywords:** Autoimmune Diseases, Thyroid Diseases, Bio-robotic Resonance and Thermodynamical Interaction with Analogy of Frequency-Resonance Setting Formation Method, 5th Law of Thermodynamics, ELMAS's Equation, ELMAS's Theory of Thermodynamics, Medical Technique, Medical Thermodynamics, Economic Thermodynamics, Hemodynamics, Entropy, Negentropy, Resonance, Exergy, Frequency, Thermodynamic, Energy Transfer, Fluid Mechanics, Heat Transfer, Mathematics, Computational Fluid Dynamics (CFD), Bio-robotic Resonance, Thermodynamic Interaction, Hyperthyroidism, Hypothyroidism, Goiter, Homeostasis.

## Introduction

The thyroid gland, located in the front of the neck in a butterfly shape, is the primary endocrine gland that regulates metabolism, energy use, heart rate, and body temperature by producing T3 (triiodothyronine) and T4 (thyroxine) hormones. Controlled by TSH secreted from the pituitary gland, this gland causes fatigue/weight gain if it is underactive (hypothyroidism) and palpitations/weight loss if it is overactive (hyperthyroidism). [71], [72], [73], [74], [75]

### Thyroid Diseases and Examples of Use (Symptoms)

Thyroid gland disorders occur due to dysfunctions or structural changes in the gland:

- Hypothyroidism (Underactive): Fatigue, constant sleepiness, inability to lose weight, dry skin, and intolerance to cold.
- Hyperthyroidism (Toxic Goiter/Overactive): Palpitations (tachycardia), excessive sweating, weight loss, tremors, and arrhythmias.
- Goiter and Nodules: Enlargement of the thyroid gland (goiter) or the formation of nodules (lumps) can cause swelling in the neck, difficulty swallowing, and coughing.
  - Thyroiditis: Inflammation of the thyroid gland (acute, subacute, chronic/Hashimoto's) can be accompanied by neck pain and fever.
- Thyroid Cancer: Malignant tumors that usually manifest as a nodule or swelling in the neck, sometimes asymptomatic. [71], [72], [73], [74], [75]

### Thyroid/Thyroid Gland Synonyms and Related Terms

- Thyroid: The butterfly-shaped gland in the neck (Endocrine gland).
- Goiter: Enlargement of the thyroid gland for any reason.
- Toxic Goiter: The thyroid gland producing too much hormone (Hyperthyroidism).
- Hashimoto's: Chronic inflammation in which the immune system tries to destroy the thyroid (Cause of Hypothyroidism).
- Thyroid Hormones: T3 (Triiodothyronine), T4 (Thyroxine).
- TSH (Thyroid Stimulating Hormone): A hormone secreted from the pituitary gland that regulates the thyroid.
- Diagnosis and Treatment Methods

Thyroid diseases are diagnosed with TSH, Free T3, and Free T4 blood tests. Treatment is applied in the form of medication (hormone pills or thyroid-suppressing drugs), iodine therapy, or surgical intervention (thyroidectomy) depending on whether the thyroid is underactive or overactive, the presence of nodules, or suspicion of cancer. [71], [72], [73], [74], [75]

TPO and Anti-TPO are critical markers that show how the body's immune system responds to the thyroid gland.

## What is TPO (Thyroid Peroxidase)?

TPO is a vital enzyme found in the thyroid gland and necessary for the production of thyroid hormones (T3 and T4). It enables the conversion of iodine into hormones. [71], [72], [73], [74], [75]

## What is Anti-TPO (TPO Antibody)?

Anti-TPO is an antibody produced by the immune system to mistakenly attack this enzyme. When the body perceives its own tissue as "foreign" and produces these antibodies, damage or inflammation can occur in the thyroid gland.

### What Does a High Anti-TPO Level (Positive Result) Mean?

A high level of Anti-TPO in the blood (usually above 35 IU/mL) indicates that the immune system is actively attacking the thyroid gland.

- Hashimoto's Thyroiditis: This is the most common cause. Approximately 90-95% of patients have positive Anti-TPO levels.
- Graves' Disease: This disease, characterized by an overactive thyroid, can also have high levels (65-80%).
- Risk Indicator: Even if hormone levels (TSH, T4) are normal, high antibody levels indicate a high risk of developing thyroid disease in the future.
- Other Conditions: It can also be elevated in type 1 diabetes, rheumatoid arthritis, lupus, or post-pregnancy thyroiditis.

### Things You Should Know

- Normal Value: While it varies depending on the laboratory, 0-35 IU/mL is generally considered normal.
- Does Not Make a Diagnosis Alone: Treatment is not initiated based solely on Anti-TPO levels; it should be evaluated together with TSH, Free T3, and T4 values.
- Cancer Relationship: Elevated Anti-TPO levels do not directly mean thyroid cancer; they are usually related to benign autoimmune processes. [71], [72], [73], [74], [75]

Emin Taner Elmas's Theory of Thermodynamics is a comprehensive framework bridging physics, medicine, and society, emphasizing entropy regulation. It explores energy transfer within the universe via a pressure vessel analogy, applying these principles to medical thermodynamics (e.g., drug-cell interaction), where disease is interpreted as high-entropy states and health as low-entropy. ((Elmas, 2020; Elmas, 2024; Elmas, 2020; Elmas, 2020; Elmas, 2020; Daş et al., 2024; ELMAS, 2024; ELMAS, 2024; ELMAS, 2024; Elmas & Bucak, 2023; Elmas & Bucak, 2024; Elmas, 2023; Elmas, 2019; Elmas, 2017; Elmas, 2017; Elmas, 2024; ELMAS, 2024; Elmas, 2014; ELMAS & OĞUL, 2025; ELMAS & KAYA, 2025; Elmas & Cınbulak, 2025; ELMAS & KUNDURACIOĞLU,

























## Biography of Author

Asst. Prof. Dr. Dipl.-Ing. Emin Taner ELMAS



Asst. Prof. Dr. Emin Taner ELMAS is a Mechanical Engineer having degrees of B.Sc., M.Sc., Ph.D., and was born in Sivas in 1974. He completed his doctorate at Ege University, Graduate School of Natural and Applied Sciences, Mechanical Engineering Department, Thermodynamics Science Branch, and his master's degree at Dokuz Eylül University, Mechanical Engineering Department, Energy Science Branch. He also completed his undergraduate education at Hacettepe University, ZEF, Mechanical Engineering Department and graduated from the faculty with honors in 1995 and became a mechanical engineer. He was awarded a non-refundable scholarship by the Turkish Chamber of Mechanical Engineers in his 4th year because he was the most successful student during his first 3 classes study at the faculty. He graduated from İzmir Atatürk High School in 1991.

Asst. Prof. Dr. ELMAS has completed his military service as a NATO Officer in Bosnia and Herzegovina. He was a "Reserved Officer" as a "2<sup>nd</sup> Lieutenant" as an "English-Turkish Interpreter". He was also a "Guard Commander" and served in Sarajevo, Camp Butmir within the SFOR task force of NATO. He has been awarded with 2 (two) NATO Medals and Turkish Armed Forces Service Certificate of Pride (Bosnia & Herzegovina).

In addition to his academic duties at universities, he has worked as an engineer and manager in various industrial institutions, organizations and companies; He has served as Construction Site Manager, Project Manager, Management Representative, Quality Manager, Production Manager, Energy Manager, CSO-CTO, CBDO, Factory Manager, Deputy General Manager and General Manager.

Asst. Prof. Dr. Elmas is Department Head and is an Assistant Professor of Automotive Technology at the Department of Motor Vehicles and Transportation Technologies at Vocational School of Higher Education for Technical Sciences at IĞDIR UNIVERSITY, Turkey. He is also an Assistant Professor of Bioengineering & BioSciences at the same university. He has nearly 30 years of total experience in academia and in industry. He has served as a scientific referee and panelist for ASME,

TUBITAK and many scientific institutions, organizations and universities, including NASA.

He has published numerous international and national academic scientific articles, books, and book chapters, and serves as an editor for international academic journals. He also serves on the scientific committees of many international conferences, publishing conference and congress proceedings and giving presentations.

"Mechanical Engineering, Energy Transfer, Thermodynamics, Fluid Mechanics, Heat Transfer, Higher Mathematics, Evaporation, Heat Pipes, Space Sciences, Automotive, Bioengineering, Medical Engineering Applications, Neuroengineering, Medical Technique" are his academic and scientific fields of study; "Heating-Ventilation Air Conditioning Applications, Pressure Vessels, Heat Exchangers, Energy Efficiency, Steam Boilers, Power Plants, Cogeneration, Water Purification, Water Treatment, Industrial Equipment and Machinery, Welding Manufacturing, Sheet Metal Forming, Machining" are his industrial experience fields.

As of 2026, he has been awarded the Nobel Scientist Award by the international platform organization Scientific Laurels.

Asst. Prof. Dr. Emin Taner ELMAS is also a musician, saz (baglama) virtuoso player and ney (Nay, Turkish Reed Flute) performer. He plays also cümbüş instrument and performs darbuka rhythm instrument. He has a YouTube Music Channel (Emin Taner ELMAS) which includes some of his sound recordings of him playing the saz-baglama and blowing the ney. He composed the poem written by the great poet Âşık Veysel ŞATIROĞLU under the name of "Raşit Bey" in memory of his father Judge (Hâkim) Raşit ELMAS as "Raşit Bey Türküsü", wrote it down, notated and published it as an academic article and broadcasted this song on his own music channel. He wrote the poems entitled "Canım Babam" and "Geldim Babam" which he wrote also in memory of his father and published in an academic literature journal, and composed instrumental musics for these poems. He also composed an instrumental song called "Annem Annem Türküsü" and gave it to his mother, Lawyer Tuna ELMAS, as a gift on Mother's Day, 11.05.2025. He also has a poem titled "Ney and Neyzen." He also wrote and presented a poem titled "Esra Kardeşim" to his sister, Esra ELMAS, an archaeologist and English teacher. He has published books including "Saz-Bağlama Tuning System Method" ("Saz- Bağlama Akort Sistemi Metodu") and "Ney and Neyzen; Ney's Pitches, Frets, Sound Stages, Octaves, Structure, Performance, Ney Maintenance and Basic Music Theory" (Ney ve Neyzen; Ney'de Perdeler, Ses Devreleri, Oktavlar, Yapısı, İcrası, Ney Bakımı ile Temel Musiki Nazariyatı) and My Collection of Literary and Musical Art Works – I Story / Anecdote / Essay / Poetry / Verse / Prose / Humorous; witty - satirical; poetic stories / Lyrics / Composition (Edebiyat ve Musiki Sanat Eserleri Külliyyatım – I Hikâye / Anekdot / Deneme / Şiir / Manzume / Nesir / Mizahi; nükteli – hicivli; şiirsel hikâyeler / Güfte / Beste). He continues his artistic studies by writing various articles, books, poetry, lyrics and also realizing musical composition and repertoire works.

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