

Functional and Cellular Immunotherapy (FCIT) Concept

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Abstract

Inflammation is the process by which the immune system recognizes and removes environmental factors, and begins the healing process. Inflammation can be either acute or chronic. However, the cause of many chronic inflammatory conditions is poorly understood. Chronic inflammatory responses are an ongoing process as long as the environmental factor is present. Sometimes, the response makes the body attack itself.

In this paper a closer look at finding out the causes of chronic inflammations, how to treat them on an individual basis, how to reverse the disease early on, and how to repair damages that the inflammation has caused.

Keywords: Orthomolecular medicine; Functional medicine; Environmental medicine; Regenerative medicine (Cellular therapy); Immunology.

Abbreviations

FCIT:Functional and Cellular Immunotherapy;
DNA:Deoxyribonucleic Acid; NSAIDS:Non-Steroidal Anti-Inflammatory drugs; IL-6: Interleukin 6; TNF- α :Tumor Necrosis factor alpha; COVID 19:Corona virus disease 2019.

Functional and cellular immunotherapy (FCIT)[®]

FCIT is a unique concept that was developed in 2018. The aim is to build a combined and individualized health treatment facility that treats chronic diseases that make up more than 80% of diseases seen in hospitals around

the world. Chronic diseases constitute a burden on any Government that could be estimated at billions or trillions of dollars. The idea of FCIT is that it can cure the causes of chronic diseases not the symptoms by cleaning the body to function at its optimum, and then replace damaged cells and organs by stem cells.

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This means correction of function and structure. FCIT concept implements five main medical approaches for treatment,

namely, functional, orthomolecular, environmental, cellular therapy, and immunotherapy.

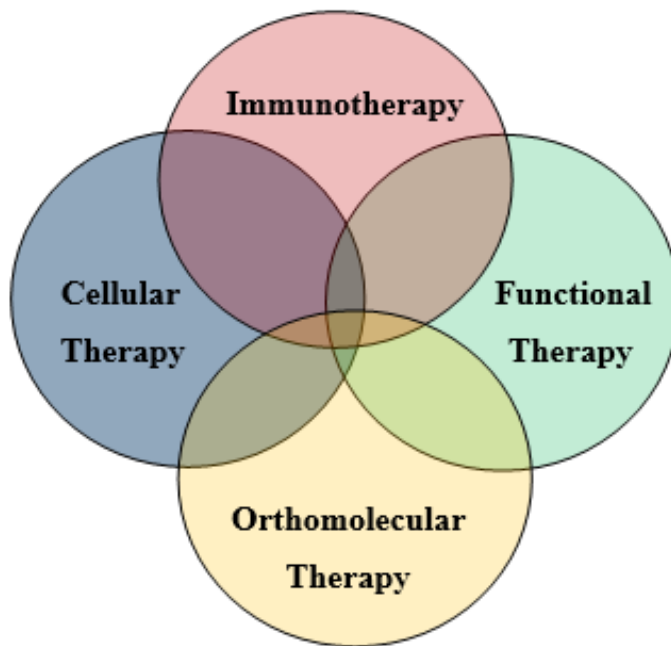


Figure 1: FCIT © Model.

Mission

To restore health from chronic illnesses by treating the root cause of each disease on an individual basis.

Vision

Develop and introduce an accredited program in the practice of Functional Medicine, Cellular Therapy, and Immunotherapy, and through it treat and create a new health and well-being culture.

How does chronic inflammation start?

Environmental factors are influences outside of cells that affects DNA, mitochondria, and other organelles leading to the release of proinflammatory cytokines and causing

inflammation. Just like microorganisms that cause inflammatory responses, environmental factors lead to alteration in protein and hormones production that becomes non-self. This, in turn, lead to inflammation due to inflammatory cytokine production to attack the new non-self-protein and hormone that was formed.

Examples of environmental factors

Diet=Gluten, casein (milk), processed foods, excess sugar, fast foods, alcohol, and preservatives.

GMOs=Genetically Modified Organism crops that goes into food and feed production.

Medication=Antibiotics, corticosteroids, NSAIDS, and contraceptives.

Heavy Metals=Mercury (amalgam) in dental fillings, vaccines' solution, and others.

Infection=Bacterial and yeast overgrowth, viruses, and loss of normal flora.

Stress=Decreased blood flow and hormonal changes.

Pollutions=Chemicals released in the environment (pesticides, plastics, factories, and others).

Environmental factors mechanisms that lead to chronic diseases

Mitochondria

Environmental factors lead to mitochondrial defects which lead to oxidative stress (excessive production of reactive oxygen species (ROS) in cells and tissues). This leads to the damage of cellular molecules such as DNA, proteins, and lipids; which, in turn, will increase the chances of mutagenesis. Oxidative stress will also lead to the synthesis and secretion of proinflammatory cytokines such as nuclear factor-kappa B/active protein-1 (NF- κ B/AP-1). The release of proinflammatory cytokines over a period of time will decline cell repair leading to a chronic disease.

DNA

People tend to think that if born with unchanging DNA blueprint. This is not true. Blue prints are epigenetical modifications over a period of time. Epigenetics is gene alterations by knocking in or knocking out bases. This alteration will lead to alterations in DNA and Histone methylation and

acetylation, respectively, and regulation of telomere's length and integrity. The new altered DNA will lead to altered protein synthesis, and this initiate immune responses in the form of macrophage, T and B cell activation and release of cytokines and antibodies. DNA alteration will also regulate NF- κ B-dependent gene expression and recruitment of NF- κ B promoters such as those of IL-6 and TNF- α cytokines that are critical for inflammation.

Inflammation initiates immune response on a large scale

Gut inflammation leads to Leaky Gut Syndrome and loss of micronutrients, which, in turn, leads to adrenal gland fatigue. Peptides, cytokines, and hormones from the gut transfer their messages to the brain via vagal nerve – gut axis, then to the blood – brain barrier, and react with neuron receptors. This leads to the release of inflammatory mediators from microglia cells (dendritic cells) and afferent neurons which finally lead to mitochondria dysfunction in the brain. This will result in autism, migraines, seizures, ADHD, neuromuscular diseases, and others. Environmental factors, therefore, will affect the mitochondria and the DNA in blocking, in malabsorption, and in the loss of micronutrients down the inflammatory pathway.

These micronutrients contain immune-boosting nutraceuticals, polyphenols, terpenoids, flavonoids, alkaloids, sterols, unsaturated fatty-acids, vitamins and minerals such as vitamins A, B6, B12, C, D, E, and folate, and trace elements such as zinc, iron, selenium, magnesium, and copper.

Two important reasons why our bodies cannot naturally repair damages caused by chronic inflammation

1. Failure to eliminate environmental factors that are causing acute inflammation leads to increased release of inflammatory cytokines over a lengthy period of time which will lead to the loss of micronutrients

2. Insufficient amounts of recruited stem cells to the site of inflammation. Therefore, finding a way to reverse the chronic inflammatory process, and this could be done if addressing the environmental factor that is causing it.

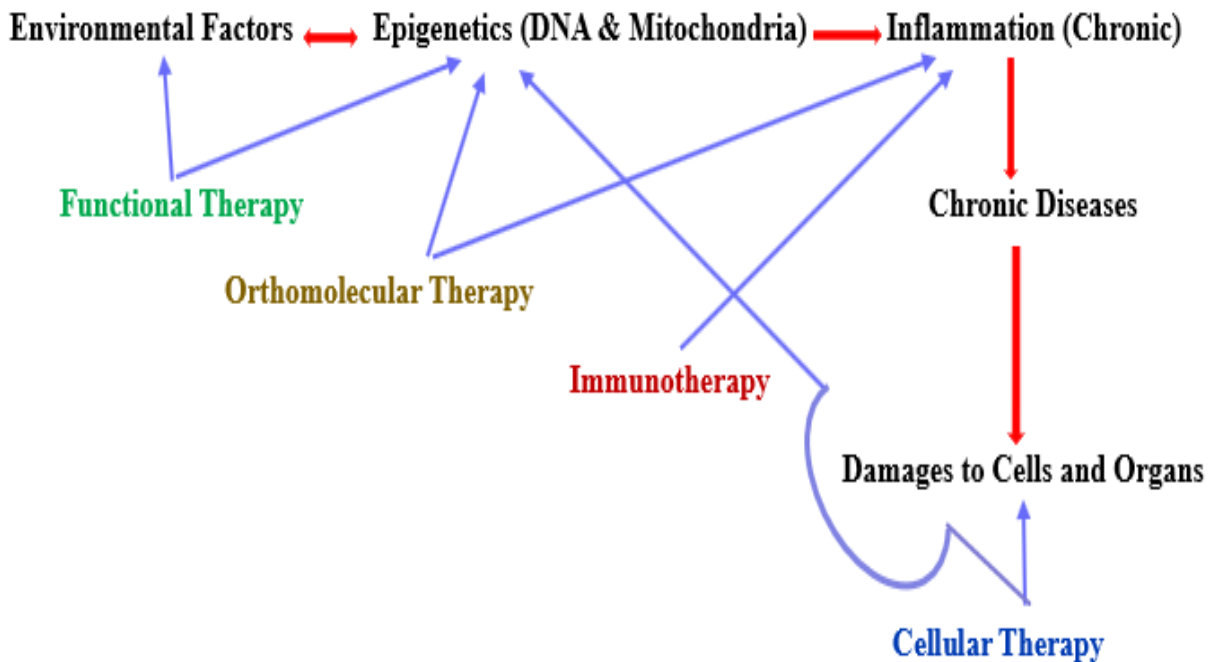


Figure 2: Explaining structure and function treatment by FCIT concept.

The FCIT concept consists of three treatment approaches

- Remove environmental factors that are causing chronic inflammation and impeding the body from moving towards an optimal state of physiology.
- Add what's lacking in the body as a result of inflammation to bring its physiology back to a state of optimal functioning.

- Infuse stem cells for treatment of damaged cells, organs, and vessels.

The FCIT treatment approaches in more details

Orthomolecular/functional therapy

- Remove environmental factors that are causing epigenetically modifications and causing inflammation.

- Assess micronutrient status and replace lost ones.
- Repair gut flora.

Stem cell therapy

- Usage of stem cells derived from cord blood, Wharton's jelly, stromal vascular fraction (SVF), and cells from other sources for treatment of chronic conditions.
- Uses of exosomes. Exosomes are little packets or vesicles that bud off the outer wall of the cell. They contain everything from proteins to mRNA. They are implicated in cell-cell communication and in the transmission of genetical information.
- The chances of an Exosome causing inflammation is almost impossible, and the chance of rejection of an Exosome is also very low.

Immunotherapy

- In case of severe inflammatory immune responses, such as cancers and viral infections (COVID 19), inflammation has to be eliminated by treating the immune system.
- Modulation of epitope-specific immune responses would represent a major addition to available

therapeutic options for many autoimmune.

Using chimeric antigenic receptors T cells (CAR-T cells) and NK Cells for Cancer Treatment are two such examples.

FCIT goals

- Treat the cause of a chronic disease, not the symptoms, and treat structure and function of organs and tissues in an individual.
- Individualized coached healthcare with possibly no hospital returns.
- Minimal usage of health facilities, procedures, lab tests, drugs, etc.!
- Reduce expenditures for the healthcare sector.

Conclusion

In FCIT concept, many chronic diseases are treatable both functionally and structurally, and probably will never return to hospitals if the environmental factor was removed successfully.

FCIT concept uses different fields of medicine to treat a chronic disease instead of one. FCIT treatment concept, though seems to be expensive in the begging, will reduce healthcare expenditures in the long run.

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