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## Homeostasis - Balance, Equity, Equilibrium

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Abstract: The human body is composed of cells, tissues, organs and organ system. The ordinance of the cells, tissues, organs, and organ systems does occur simultaneously and also expresses diverse gene expression which is customized to the individualized cell type, tissue type and also it takes into account the various differential gene, protein, mRNA, expression which has been evolved over a multitude of years efforts by nature through tested and trial method which is natural selection in order to help in the ordinance of equilibrium in various tissues while upskilling the vital services of the body critically needed to ensure the growth, reproduction and perpetuation.

Keywords: human body, gene expression, natural selection, equilibrium, growth

## 1. Introduction

The process of homeostasis is centered on the principles of ordinance of the environment in the interior of the cell which takes place uninterruptedly and the Interstitial circumfluents will be circulating throughout the body. Predominant juncture of the connective tissue movement in the body which is defined as blood which is also a connective tissue by nature and cellular diversity circulates in the blood vessels, secondary transport of blood happens through the blood capillaries and the junction which is formed amidst the neighboring tissues. The blood does have a ubiquitous presence of the microbiome and is not dormant according to the previous studies and it will move with a uniform pressure, and velocity into the blood capillaries and the interstial circumfluents which is also expressed as a proportion of blood plasma and the transcellular circumfluents accumulates in the neighboring cells. The plasma capillaries are previous and many modicum are expressed in the blood plasma whereas the blood plasma polypeptides are really huge and are not permissible to come in to the capillaries. There are successive quantities of circumfluents along with convoluted constituents which are transported passively into the blood and the cellular spaces are grouped to form the tissues which represents another layer of cellular, replicative and versatile diversity. The whole performance of the crucial passive mode of diffusion is largely dominated by the kinetic modicum present in the plasma and the transcellular fluid. The whole process of movement of the circumfluents and the various ions crucial for regulation such as the sodium, chloride, bicarbonate is also similarly expressed in the capillaries' permeable holes. There are a handful of cells which are positioned at a larger distances than fifty millimicron targeting a broad spectrum of capillaries which will accurately help in the diffusion of any circumfluence, ions, gaseous motes which is found in the capillary in the interior of cell. The interstitial circumfluents admixes to form a uniform circumfluents present in the exterior of the cell and is also found in the body. Each of the system of organs execute crucial roles in the ordinance of the homeostasis while suffering and braving the perpetual excruciating pain offered by the external milieu such as the radical oxygen species, radical carbonyl species, radical sulfur species, nitrogen species, disjointed chromosomes, radical chromosomes which undergo disjunction and, intrinsically disordered proteins, cells undergoing hyperplasia, pre neoplastic cells, inflammation, and whatnot. We also need further research which will unequivocally focus on many unexplored questions and frontiers in the field of homeostasis. The field of homeostasis is also closely associated with the field of Biostasis since there are a lot of phenotypic similarities as well as a lot of differences in molecular and cellular diversity. Homeostasis is depicted as the uninterrupted ordinance of the interior milieu of the cell while braving the external triggers. The Biostasis is also defined as a counterpart of the homeostasis where they differ only in terms of efforts applied. We must also emphasise more on the integration of the association between morphogenesis and patterning which occurs during development and we must also study the different types of association lurking between various organ systems. We must elucidate the relationship between mesoderm layer plasticity, genomics silence which is a character of maternal to zygotic transition or literally defined as ceremonial transfer of power from the mother to the developing fetus, the Retinoic acid signaling, and it's semblance on homeostasis, further more we must elucidate the relationship of peristalsis, genomics silence, and it's impacts on homeostasis, elucidate the impact of homeostasis on the cardiac looping, elucidate the effects of homeostasis on the phoneme - genome wide morpholomes of blood brain barrier, blood placental barrier, blood microbiome, the association between the blood brain barrier, blood placental barrier, blood microbiome and homeostasis and it's impact on therapeutic innovation, the crosstalk between the phenome genome wide morpholomes of blood brain barrier, blood placental barrier, cardiac looping and homeostasis and it's impact on its role as therapeutic target, elucidate the crosstalk Cyclizine, of Cetrizine, Meclizine, hydroxyzine, Transforming growth factor beta pathway, Hippo signaling pathway, Fibroblasts growth factor pathway, Jak/Stat3 pathway, G protein ligands and it's semblance on homeostasis as a therapeutic target, the crosstalk between the Cetrizine, Cyclizine, Meclizine, hydroxyzine, non coding missense variants of FEN1, FAS and it's semblance on homeostasis as a therapeutic target. We need to push the field forward by conducting a lot of excruciating, blue skies research with limited amount of success and lots of failure for this is the need of the hour without solving or exploring the open questions which are lurking it would be really difficult tozero in on a single therapeutic target in regenerative medicine and it's allied fields.

## References

[1] Davies KJ. Adaptive homeostasis. Mol Aspects Med.2016 Jun; 49: 1 - 7. [PMC free article] [PubMed]

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- Kotas ME, Medzhitov R. Homeostasis, inflammation, and disease susceptibility. Cell.2015 Feb 26; 160 (5): 816 - 827. [PMC free article] [PubMed]
- [3] Baptista V. Starting physiology: understanding homeostasis. Adv Physiol Educ.2006 Dec; 30 (4): 263
  - 4. [PubMed]
- [4] Strange K. Cellular volume homeostasis. Adv Physiol Educ.2004 Dec; 28 (1 - 4): 155 - 9. [PubMed]
- [5] Modell H, Cliff W, Michael J, McFarland J, Wenderoth MP, Wright A. A physiologist's view of homeostasis. Adv Physiol Educ.2015 Dec; 39 (4): 259
  - 66. [PMC free article] [PubMed]
- [6] McEwen BS, Wingfield JC. The concept of allostasis in biology and biomedicine. Horm Behav.2003 Jan; 43 (1): 2 - 15. [PubMed]
- [7] Logan JG, Barksdale DJ. Allostasis and allostatic load: expanding the discourse on stress and cardiovascular disease. J Clin Nurs.2008 Apr; 17 (7B): 201 - 8.
  [PubMed]
- [8] Ramsay DS, Woods SC. Clarifying the roles of homeostasis and allostasis in physiological regulation. Psychol Rev.2014 Apr; 121 (2): 225 - 47. [PMC free article] [PubMed]
- [9] Torday JS. Homeostasis as the Mechanism of Evolution. Biology (Basel).2015 Sep 15; 4 (3): 573 -90. [PMC free article] [PubMed]
- [10] Clancy J, McVicar A. Homeostasis - the key concept to physiological control. Br J Theatre Nurs.1997 Nov; 7 (8): 27 - 32. [PubMed].