1. The Formation before Birth

Embryogenetic and organogenetic mechanisms of development, highly conserved among species at tissue, cellular, and molecular levels\(^\text{[1,2]}\), unfailingly prepare for a sustainable body at birth. The body later develops in momentum while well preserving its innate characteristics to overcome living demands.

After conception, the human body at cellular level develop from proliferation, differentiation, acquisition of polarity and cell movement. At tissue level, patterned cell differentiation collectively migrate and form the complex structures of adult organs. Cell migration is essential\(^\text{[3]}\). Final morphogenesis and integral organization is achieved through physical and chemical cues in the microenvironment\(^\text{[4-6]}\) unto processes highly controlled and coordinated in time and in space.

Concurrently, the neural, vascular and interconnective matrix spread out the contextual assembly over the body as three essential dimensions together. Nervous elements and blood vessels in an entanglement relationship develop in parallel\(^\text{[7]}\). Following similar differential cues from the same mesenchymal connective tissue environment, they ramify in progressive branching network to reach together every part. While secreted signals mediate information propagation, the coupled neural and perfusional elements embody the ramifying sophistication of body elements in formal order. Mechanics also mediate information propagation between cells\(^\text{[8,9]}\) and biophysical attributes of the associated mesenchymal matrix contribute to instructive sculpting of the embryo topology\(^\text{[10]}\). The tightly regulated organization gives rise to functional tissues and operational organs that match the physiological needs of the organism.
2. The Body Prepared at Birth

2.1 Biological Robustness with Adaptivity

For primal development, the body at birth is equipped through endowed programs robust enough for species survival and also through varying degrees of adaptations to its environment as windows open during pregnancy. In due course adapting life challenges and environmental demands, the body and whole-body functions would deviate significantly.

Biological robustness[11] sustainably carries the individual up the years ahead. Short of robustness, there need be continual good performance recruited to keep the individual well through life over many uncertainties and constraints. Robust living systems have mechanisms doubly assured to make sure that the outcomes of biological processes are stereotypical even when environments vary or perturbations arise[12].

Thus formed at birth, most are endowed as being alike, as being made-up through evolutionary conserved genetic networks that pattern cellular changes and shape the organs, and also through cellular-physical mechanisms related to shared physical organization rather than evolutionary descent[13]. While the physical and chemical cues coordinate morphogenesis and patterning[14], it is the topology of the fascial, circulatory and neurohumoral networks that build up biological robustness of the final contextual assembly of the body. Thereon, flexibly developing nervous directives and perfusion elements together adapt to new changes in the integral unit[7].

2.2 Nervous Directives and Perfusion Co-play to Live

Nerves and vasculature are patterned in similitude and closely alongside throughout development and up to adulthood. Since embryogenesis, growth cones for neurons and for vasculature, sharing receptor expression[15] and other features[16], both project onwards by extending filopodia, dissolving confronted obstructions by secreting proteases[17,18]. Following similar differential cues from the connective tissue, they go in parallel. In the embryo, pericytes as multi-functional mural cells generate early microvascular structures before recruiting endothelial cells to line vascular vessels[19]. Pericytes wrap around the endothelial cells in every vascularized tissue in the body. The embryonic neural tube provides positive blood vessel patterning signals[20]. It directly steers formation of both autonomic nerves, and smooth muscle cells and pericytes over the large thoracic arteries and forebrain vessels[21,22]. During development, certain arteries become innervated and form a pressurized circulation to allow proper control of the distribution of flow to vital organs[23]. In the periphery, nerve-artery congruence is established through nerve-derived signals that direct arterial differentiation and regulate patterns of angiogenic remodeling[24]. In the developing brain, pericytes appear early during vascular development[25], and neural tube-derived signals regulate sprouting capillaries to induce formation of blood-brain barrier characteristics in the neural tube vasculature.

In the adult, endothelial cells still show significant growth potential, even for regenerative or pathological processes[26,27]. Neurogenesis and angiogenesis are closely intertwined, with endothelial cells in vascular niches releasing cues for neural stem cells[28,29]. The close association between nerves and blood vessels as neurovascular bundles in the periphery and as neurovascular unit in the brain[30] as well as the correlation between neuronal and vascular cells[31,32] emphasize their symbiotic relationship. Information and perfusional resources go together to suit spatial and temporal body needs.

With body assets and with resources carried along nervous and perfusional elements, all kinds of activities spring forth. During activity, blood flow needs to reach the local tissues at the right time and place and in the right amount. The developmental, structural, and functional interdependence between neural and vascular elements is closely related in health and disease[33]. The fascial connective system where circulatory and neurohumoral elements are woven together (Figure 1), is organized as a network with paths for the transportation of energy signals including Meridians[34].

The three related dimensions of the fascial organization, the co-directed nervous and perfusional elements are adaptive assets for the body with operational organs and self-vitality subsystems. Their incorporation in the body both spatially and temporally prepare the core adapting to the variable demands of the surrounding while having controlled stability to ensure proper function.

3. Living Strong with Adaptive Body and Assets

Despite phenotypic variations, the human body core basically functions and sustains itself through cellular processes, operational organ systems, and self-vitality subsystems for survival in the environment[35].

3.1 The Hardcore

The body's rigid framework is provided by the skeletal system including cartilage, tendons, and ligaments. The whole musculoskeletal system is anchored together with the integumentary system to enable the body to
move about as these support and are supported by the body operational organ systems - cardiovascular lymphatic system, respiratory system, digestive system, nervous system, endocrine system, urinary system, and reproductive systems. The fascia sheets underneath would encase, separate and stabilize various parts.

As the body develops into the proper being, these organ systems are installed early. When early life biological robustness declines, the individual would sustain his body through well-patterned dynamics. Interestingly, an integral person may still have wholistic gaps yet not filled but the person remains positive as a whole \(^7\). To be snug and fit, the whole body builds up from organ complexes as self-vitality systems complementarily \(^35\).

Well-patterned dynamics with self-regulatory core-vs-match and remodeling mechanisms to suit the environment would produce snug resource provisions to accommodate adaptation in the capacity range of the individual.

### 3.2 Being Snug to Fit

Successful survival in the real world counts on coping well with fluctuating levels of both internal and environmental perturbations. Rings after rings of development with well-patterned dynamics (Figure 2) would form patterned core responses to maintain the person as a whole for a stabilizing core, yet having flexible physiological and behavioral responses to context-appropriate behaviors. In fact, even since birth, the body is equipped with processes that the body core can continually match its environment without losing its formation and strength.

![Figure 1. Three body dimensions essential for adaptation](image1.png)

**Figure 1.** Three body dimensions essential for adaptation

![Figure 2. Well-patterned dynamics](image2.png)

**Figure 2.** Well-patterned dynamics

- Core and Match
  - Righting abilities, “rightness”
- Remodelling
  - Contingent poise
- Individual body congruence in body layers functional-anatomically
- Self-regulatory integrity maintenance mechanisms restituted for gaps reduced,

- Resources provision over fluctuating levels of variables for consistency (acting body state is in positive snug)
  - In the basal homeostatic range, variables and changes are accommodated in the ‘normal’ homeostatic range of the body
  - Over this range, the body capacity with resourceful adaptivity provides for certain resilience when change would not affect the core momentum.
  - Regulatory heterostasis, allostatics, hormesis and adaptive homeostasis are the reactive or anticipatory body-mind mechanisms in case. Positive accommodation allowed until adaptive mechanisms yield beyond capacity range.
3.2.1 Core and match Processes

With core-vs-match mechanisms, deviations tend to be corrected by self-regulating mechanisms [36].

A. Righting behaviors: setting the body in its own right position keeping least deviations from its optima.

Self-regulatory integrity maintenance mechanisms with evolutionary survival value [37-39] start with the innate motor setup, from righting reflexes, positive support reflex, symmetrical and symmetrical tonic neck reflex, Galant reflex, the Babkin reflex, the parachute, and the palmar grasp reflex, all preparatory responses born to match immediate environmental changes and demands. Following the first four rightly responses, an individual is subsequently consolidated in a poise as a stabilized stance whereby dynamics for all sorts of movements, contingent for common recurrent needs, can be tuned with ready autonomy on top of the poise to meet new situational needs. Following the latter four matching responses, the primitive rooting reflex and the visual grasp reflex facilitate development of the motor-visual coordinative setup, important for being optimized automatically to grasp the surrounding environment by reach and scenarios, avoiding off-matching and extraneous movements and mental strain that mean extra costs [40].

These many righty and matching responses automate the return of the individual to the stabilizable frame [36] while anticipatory and reactive mechanisms enhance effectiveness and efficiency. The body during activities adjusts itself to move in optimal ways, energy wise [41-43]. Oriented grasp of surrounding environment [40,44,45] stabilized within a mode of rightly processes, supports the individual conserving energy over his domains and terrains for forward thrust with stability (Figure 3).

B. Remodeling: continual recomposing the body state

Body adaptation essentially is to prepare the body core, elements and assets ready spatially and temporally to enable adjustment to the variable demands of the surrounding while retaining controlled core stability to ensure proper function. Physiologically, neuro-cardiac matching [46] can enhance this capacity. Integrally, non-verbal cues though face-to-face interactions demonstrate efficient interactional matching since infancy [47,48]. Infants’ gaze synchrony (matching social gaze between parent and child), and affect synchrony (matching affective expression) during interaction with parents contribute to internal development of self-regulatory capacities in the autonomic system [49] and cognitive growth [50].

In fact, all five self-vitality subsystems [35] evolve with repeated remodeling as they mature. The acquisition system during food handling would evolve memorized vegetative behavior during interaction between the nervous system and the enteric neural system, gut microbiota and immunologic system. Patterned dynamics for situations develop both in the patternable energy-process driver during acclimatization to environment and synchronization in lung patterns over activities. Same for the situational option-generation system for heart-mind congruence in determining mobility or motivation over

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**Figure 3.** Core matching patterns well-coordinated for the individual develops and maintains his core to keep vitality against environmental perturbations

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An integral unit the Core

- One integral unit
- maintain integrity of the entirety of the individual
- core stabilized within a rightly mode
- stabilized core supports the individual over his domains and terrains in conserving energy for forward thrust and stability
- the more stable the core, the less it be disturbed

The Environment Matching

- Expressing the world and body events
- to actuate in domains and terrains to live
- matching responses coordinated to suit the individual’s interactive operations
- facilitate adaptive input-output linkages
- the better the match, the more the person functions, with less difficulty to maintaining integrity

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motives or emotive moves according to their importance. These are some of the early core matching interactions wherewith repeated remodeling develop well-patterned dynamics, followed by other maturational changes, even for conformity norms\[51].

3.2.2 Neural Vascular Effectively Coordinated

Closely associated neural and perfusional elements and their coordinated regulation during well-patterned dynamics provide for ready and matching mechanisms to act and react to surrounding variations and disturbances\[57].

A. Neuro-vascular coupling: coordinated regulation in effective patterns

The body tends to maintain an adapting or positioned suspense with a forwarding stance. In assertional activities, neural and perfusional match to the surrounding environment will be a prime objective in securing the individual’s forward thrust supported. Going across variable grounds, capabilities and capacity vary in each instance and in each individual but strains would be especially significant in the brain which cannot stand interruption of cerebral blood supply for a few minutes. Extra effort is deemed necessary in activities when an individual needs to exert beyond basic levels of functioning or attempt alternative strategies even recruiting other resources to maintain performance.

A number of functionalities are in place to provide resourceful support governing appropriate microvascular density towards needs and for redistribution for snug coordinated neuro-vascular regulation in effective patterns for the whole body during and after assertion\[7]. These include neuro-vascular coupling with fascial support at tissue level, autoregulation at regional levels\[52, 53] to maintain stable blood flow to a region over a wide range of systemic conditions, recruitment of the hepatic splanchnic circulation during assertive activities at whole body level\[54], and patternable metabolism and perfusion with body pacemakers according to daily activities\[55]. Execution is facilitated with assured dynamics and control by simply fine-tuning itself to match for discrepancies at task over a stabilized core that maintains the person as a whole.

B. Brain-circulatory system match: coordinated interplays

The whole body adaptivity depends on both the nervous system and the circulatory system in coordinated interplays temporally. The nervous system directly influences blood vessel patterning resulting in neuro-vascular congruence that is maintained throughout development and in the adult\[56]. The brain is conditioned with the heart which apart from the medullary autonomic nervous system regulating ordinary cardiac function, is directed by the limbic autonomic input which discretionarily prepares circulation for motive or emotive endeavors\[57]. Common signaling pathways play a key role on cardiac and nervous system development\[58]. The brain-heart interplay is conditioned during maturation to anticipatorily and reactively provide constancy of perfusion support sufficiently during all modes of living. A series of vascular, neural and hormonal stabilization mode, consciously or subconsciously regulated, to balance himself in his setup with the environmental influences facilitate modulation of circulatory homeostasis for body and mental actualization during matching out\[57]. Pushing forward, information directives and perfusional resources go hand in hand. Local blood supply is matched to neuronal demand.

Full exposition of neuro-vascular coupling as well as snug and fit dynamics shows analogously how Chinese medicine views energy processes and blood perfusion prime for the body as a concept with Qi (Energy process) and Xue (Blood) together\[7]. There may be a depletion or a repletion\[59]. Emphasizing the interplay between Qi and perfusion, Huangdi Nei Jing described how the Zang organs are vitalized by meaningful ideas and intention up to the enduring will, well bred-in-the-bone and in essence so that, through body channels, the body’s five Zang systems become depot organs and are shaped\[99]. In other words, parts of mind and body interact with the environment through the energy processes, circulatory channels and blood as well as fascial system to consolidate related Zang organs to allow actuations with flexible physiological and behavioral responses to context-appropriate behaviors (Figure 4).

The better the matching responses, the stronger would be the individual to function. Herbal therapies can soothe matching processes in the body homeodynamics.

3.2.3 Snug Processes

Body snug provides further capacity for adaptiveness. The body would function better in its own right optima away from deviations. Snug is a body functioning poised at the energy-efficient body state that autonomously maintains activities without stresses. A paper summarized the salient evidence and features\[7].

A. Functioning in optima: conditioned dynamics to produce unstrained effectiveness

To preserve its integral functionality for the years to come, living as an organized unit in congruity with least incompatibility would be effective and more cost efficient. The biochemical, hormonal or cephalic projective body responses are trying to establish homeostasis, and at times
of extra uncomely demands, to be regulated as heterostasis, allostatic, hormesis and adaptive homeostasis [60-63].

While lives of any organism depend upon the entire ecosystems, the body developed pertinent energy efficient mechanisms. Human beings have core-vs-match processes and neuro-vascular setup for ensuring conservation of cost efficiency for effective living and assertion modes in different terrains. Sometimes continual demands may call even for shifts or new body changes even in constitutions, psychotypes and adaptive structural types. Energy efficiency is an important principle for optimizing physiological functions within organisms [64]. Conserving biological and physiological synchrony between the individual and environment in interactions produce snug. With more stable peaceful environment, there is more snug.

In variable environment, this energy efficient state depends on the central systems well in disposition, the body toned up, and activities handled by functions wherewith reserves are never over-drained. The core matching mechanisms extend inside the body to organ systems and outside the person to social systems [51]. Maturation of body habits and brain circuits and associated physiological regulation and autonomic response would support self-actualization with social engagement. A close relationship between emotional phenomena and rational processes has certainly been established [65]. To have conditioned dynamics maintaining unstrained effectiveness at activities as a snug state would contribute to cognitive, social, and emotional growth [66,67,57].

B. Restitution: restoration of proper order
Simply, individuals cannot go too much over just to fit. Overt demands above the basic provisions may happen in everyday activity, and the body core and internal processes may become deflected. In daily life, the deflected body and the internal processes need to be re-instated to their primary righty positions by restoration at sleep after all activities and demands finish. Notably, rest and sleep may not complete the re-setting of the body in snug when the person hangs on with impertinent activities and squandering thoughts. By fine-tuning over the readily prepared core, the body may form and put up normative responses promptly by sets of concretized external processes or tackling behaviors. In congruence and snug, one can work well and respond readily to diverse activities.

4. To Go Forth, Being and Striving
The above basic assets support the person for functioning through his developing years. There are certainly other body assets and skills attained in adulthood. However, it is most often these basic assets that the individual has to use to re-attain snug while reaching out for being fit. Survival quality depends both on fitness and snug of the individual.

4.1 Snug and Fit Dynamics for its Sophistication

Snug dynamics is one way to understand life (Figure 5) [7]. Recent advises tend to recommend multitasking in this world of many things happening together. As people want to add value, pushing for “fitness”, there will be assertive patterns built in the body and mind. On the other hand,
snug dynamics is another way to achieve being fit for the individual in the world. Then one sleep for to sleep, work for to work, play for play, and energized wisdom is built up with concentration. One would no longer be sleeping yet indulged in work thoughts, playing yet still concerned with work, nor working yet still hanging on play, as people nowadays are. Daily function can be metaphorically likened to the performance of the Olympic karate winner who strikes sharply and rigorously yet in between strikes is in calm breathing and composed.

Figure 5. Functioning style with well-patterned snug dynamics to balance with assertion patterns to fit

The mature person should be often re-attuning emotional and rational synchronous interaction as reciprocity would consist of mutual beneficial exchanges. When proficient with core strength and matching, the processes may extend broader to physiological regulation inside to support neuro-circulatory perfusion and activity actuations and interactions outside.

Snug living changes body. Rabbits on a 2 percent cholesterol diet were watched in two groups, one caringly petted, held, talked to, and played with on a regular basis, and the other a non-cared control group. The petted group finished with more than a 60 percent reduction in the percentage of aortic surface area exhibiting sudanophilic lesions, even though serum cholesterol levels, heart rate, and blood pressure were comparable.

4.2 Re-patterning with Snug and/or Fit at New Encounters

Stabilized patterns and remodeling allow other full functional changes. Matching fascial, circulatory and neurohumoral elements and mind-body-environment interactions throughout the body start early and contribute to shaping interactions between external and internal domains. The surrounding dragging forces on the whole conformable alignment would be acting to match or dissociate it. Each chanced event encountered would add multi-dynamic changes inside according to pertinence and weightiness of issues and forces. Core functions constantly righting, myofascial organization more flexible and properly aligned, and autonomous adaptive behaviors well-patterned, the responses suited to the individual’s center of balance would support better carrying out and coping further demands. More reserves with strength and capacity would meet situations and even stresses with less traumatic confrontations. Fitter are those with more snug.

Some may develop with a setup for being snug internally and fit externally, while others with dysfunctional patterns may develop into strained and stressful states even with depression in repetitive cycles. Sleep loss could affect the capacity for performance and access to energetic resources and associated with global cognitive decline. Real-time lags in the mutual support between neural directives, vascular perfusion and metabolic needs are obvious to the patient subjectively. Remarkably, viewing these domains as separate entities would not see real-time lags as problems. Yet, as nervous-perfusion poorly matched, electrocardiographic changes is associated with the severity of acute cerebral ischemic stroke. In Chinese medicine, Qi deficiency syndromes, described as having fatigue, weak voice, weak pulse and pale tongue with teeth marks on the side, are believed to be at the root of many common Western disorders. When his nervous-perfusional resources are not providing necessary timely matching with environmental needs, his complexion should show it up.

When the snug capacity reaches critical inadequacy to allow being adaptive, the body yielding to new changes may decompensate. When inadequate to overcome, stress evokes a variably wide range of physiological responses as general adaptation. These responses can be undue, inappropriate or exaggerated response to the situation. In the aging, a decline in functionality is often kept up by compensation mechanisms.

5. Clinical Directions

In general, for the person to function well, the core

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must be integrally firm and stable as it continually keeps timely matching to the surrounding, dealing with fluctuating levels of variables for consistency. The core bio-physiological self-regulatory capacities during self-actualizations are recurrently remodeled in patterns of body processes and brain circuits. Snug living changes body. More snug, more reserves and capacity to face new situations without necessity for stressful changes. Neurovascular coupling mechanisms at all levels and the core-vs-matching capacity enhance each other. Contingency surpluses from physique built up and resources acquired set an individual at ease to go across rough terrains and variable grounds to complete various tasks. Well-patterned dynamics tend to further provide more capacity for adaptiveness.

Only understanding these can clinicians realize the body’s strength and direct it into real health with therapies. A new overviewed body map [33], and re-understanding of the three related dimensions of the fascial organization, the co-directed nervous and perfusional elements could be the restarting basis for re-defining our therapies, whether eastern or western medicine. The operational organs may be likened to administrative compounds in a city. Underneath, likened to the subway network are the contextual neuro-vascular coupled channels with information, resources and meaningful entities co-routed. The fascial system provides, like related pipes and groundwork, the textual discoursive infrastructure. When mature, the mantle, operational organs and cells constitute the body form installed in topological position. The five self-vitality subsystems depict the body state adapting to the body-environment changes. The way the individual actuates and asserts is his body disposition. The body form, the body state, and the body disposition could comprehensively describe the whole person for how he lives in health and disease.

The body form, the body state, the body disposition are areas to assess for good therapy. Any clinician who cannot make out a full picture as well as life dynamics would be at best a technical expert. Thereby, for therapy to achieve making body snug, restituting the body state as well as re-instating a good body form (such as a smooth lumbar curvature and postural dynamics without nodular bumps) would be important. More details could be elaborated for molding the body disposition better in disease and in health.

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