

# Apollo: A Radical Lower Extremity Health Protocol

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**Abstract.** A simple and effective lower extremity health protocol would allow individuals to prevent and resolve injury without relying on professionals who treat symptoms of dysfunction without addressing the root causes. By lowering time preference and viewing pain as feedback to be respected, individuals are able to make lifestyle choices today that lead to a healthier tomorrow. By understanding how human biology adapts, individuals can achieve better health by reducing unnatural inputs and increasing natural inputs. Protocol consensus is achieved through peer validation and primitives could be created to offer context specific application templates. Health professionals can validate the protocol and integrate principles into their practice in order to deliver effective guidance to those they serve. In a world of abundant information, determining what is true and useful is a major problem. We propose a solution to the problem with proof of work behavioural software grounded in first principles that can be easily applied by any human. This protocol seeks to upgrade our collective understanding of lower extremity health and presents a radical approach to prevent and resolve dysfunction. We assert that the ultimate form of healthcare occurs when individuals accept responsibility to care for their biology by applying essential principles in their daily lives. In order to reclaim responsibility for health, individuals require truthful and effective information which they can apply experientially in their lives. Through peer validation, protocol consensus will create social and financial incentives for the development of products and services that support better health. Each individual will have their own optimal application of the protocol but the fundamentals must be respected in order to achieve effectiveness.

## 1. Introduction

Treating lower extremity dysfunction has come to rely almost exclusively on disease care professionals serving as trusted authorities to diagnose and treat injuries. Interventions may mitigate symptoms, but diagnosing and treating symptoms of injury without addressing root causes is ultimately ineffective at improving health long term. Without freely available education on the essential principles of maintaining a functional lower body, individuals are unable to make wise lifestyle choices to prevent injury.

The health and function of the body is a direct reflection of the behaviours to which it has been exposed. The current epidemic of lower extremity dysfunction is directly caused by harmful movement behaviours that have been culturally normalized and accepted. When dysfunction occurs, the fault lies with the behaviour choices made by the individual and not with the body itself. When we smoke cigarettes and develop lung cancer, it's not a problem with our lungs but a problem derived from the behaviour of consuming harmful toxins. Likewise, when individuals wear unnatural footwear [1] and develop foot pain, it's not a problem with their feet, but a problem derived from the behaviour of wearing footwear that disables and damages the body.

Smoking cigarettes was normalized and even prescribed by doctors in the 1950s but is now widely acknowledged as harmful to one's health. Prescribing cigarettes today would be reputationally intolerable and cause for malpractice. Today, wearing unnatural footwear and spending most of our waking hours sitting in chairs has been normalized. What is needed is an open source peer validated lower extremity health protocol based on first principles of biology instead of trust in centralized authorities. By understanding foundational principles that govern how the body adapts, individuals become empowered to modify their behaviours to prevent and resolve lower extremity dysfunction. Open source education offers a decentralized alternative to relying on centralized medical services which offer only palliative interventions.

In this paper we propose a radical approach composed of three simple and essential principles which can be easily applied by any individual to achieve better health. By lowering time preference, reducing exposure to unnatural inputs, and increasing exposure to natural inputs, the lower extremity is able to heal and develop resilience.

The word radical comes from the Latin word *radicalis* which meant "relating to a root". In our context, radical signifies a reversion back to first principles and focusing on the root causes of lower extremity dysfunction. Radical also refers to the fact that a simple approach built on first principles is a radical shift from our current paradigm of complex, ineffective treatments that offer short term symptom relief while ignoring long term unintended negative consequences. Treating symptoms of dysfunction while ignoring the root cause is no longer meeting a reasonable standard of care.

Our hope is for this protocol to become peer validated software that eliminates the need to trust centralized authorities. The protocol achieves consensus agreement through peer validation in order to authenticate truthfulness and effectiveness.

## 2. Awareness

Charles Kettering once said "a problem well stated is half solved". This statement emphasizes the reality that being aware of and understanding a problem fully is a pre-requisite to solving it.

Understanding how to care for one's body is essential to live a good life and yet few people learn anything about the topic during childhood education. While such knowledge may not have been necessary when our survival depended on our fitness to hunt, gather and defend our tribes, that is no longer the case. Modern conveniences have made it possible to avoid active lifestyles formerly required for survival, and as a consequence, humans can survive despite living a sedentary lifestyle which inevitably leads to dysfunction. With improved awareness about the root causes of lower extremity dysfunction, individuals can make lifestyle decisions that support better lower extremity health.

This protocol facilitates consensus among health professionals and enables adoption of a root cause approach by educating those they serve about the consequences of harmful behaviours. Specific to the lower extremity, two normalized unnatural behaviours in particular are causing immense suffering and preventable dysfunction: unnatural footwear and chair sitting. Footwear that damages the body's foundation and extended periods of chair sitting create unnatural adaptations at the hip which increases the risk of lower body dysfunction and injury. Because these harmful behaviours have been culturally normalized, individuals don't think to modify them and professionals don't educate those they serve about the dangers.

We assert that human hardware is adaptive, self healing and designed to last 100 years if used naturally. At birth, our software is perfect and over time we pick up error codes that corrupt our software and can end up causing premature damage to our hardware. While medical intervention is complex, fundamental principles governing lower extremity health are incredibly simple and can be understood by a 6 year old.

With this protocol we seek to disseminate awareness and fill blind spots that are creating an epidemic of preventable lower extremity dysfunction and injury. Treating symptoms of disease without addressing root causes is not healthcare and is no longer a reasonable standard of care. By expanding awareness that the lower body is an integrated system, we invalidate ineffective interventions that target isolated components. We hope to expand broad awareness that responsibility is the path to well being and that trusting disease care experts with our health carries significant risk.

While Apollo focuses on the lower extremity, we acknowledge that it does not exist in a vacuum and cannot be isolated from the supersystem it exists within. Natural exposure to light, natural food, clean water, restful sleep and low perceived stress are all required to support optimal function but are beyond the scope of this paper.

### **3. Paradigm shift**

A paradigm shift is a fundamental change in prevailing practices and results in a complete transformation in the underlying assumptions and methodology that guide a field of work. As we move away from centralized disease care and towards decentralized healthcare, individuals will require tools that empower them to reclaim responsibility.

Disease care incentivizes the treatment of symptoms with little to no focus on educating individuals about living a lifestyle that supports health. With increasing pain and dysfunction, individuals will lose trust in legacy institutions and become more willing to accept responsibility for taking care of themselves. Instead of trusting experts to treat symptoms of their problems, individuals will take responsibility for understanding how to care for their bodies to reduce injury. Modern medicine is a beautiful application of technology within the realm of acute injury, but is ineffective in the realm of educating a healthy lifestyle.

Current incentives to treat symptoms will be replaced by incentives for effectiveness. Health professionals will be compensated for their effectiveness in helping people take responsibility for their daily behaviours. Educated individuals will seek guidance from professionals who demonstrate proof of health instead of professionals who demonstrate proof of degree. As we move away from disease care, we shift towards the adoption of proof of work health protocols and the creation of products and services that help people restore health. It is the duty of care and responsibility of professionals to offer sound advice to those they serve and that requires a shift from treatment of symptoms to education. As a professional within decentralized healthcare, your health and ability to help people navigate consensus health protocols will matter more than your degree.

A parallel and related paradigm shift is also occurring in money. As humanity gradually moves from soft money to hard money, there will be a collective lowering of time preference which supports the movement towards accepting more responsibility for one's health and thinking long term.

## 4. First Principles

The protocol begins with biological axioms that we know with certainty to be true. Similar to laws of physics, fundamental laws of biology impose a non-negotiable reality upon us and must be respected. By understanding how the human body adapts to inputs received, individuals become empowered to live in alignment with their biology and optimize health.

Our guiding axioms [2] are the assumptions that the human body is self healing, self organizing and adapts specifically to the demands placed upon it. The human body is an adaptive system that strictly optimizes for efficiency and this principle applies globally to all body systems, including the lower extremity. By spending prolonged periods of time sitting in chairs, the body will optimize for chair sitting regardless of the unintended movement consequences of those adaptations. Muscles must be exposed to load in order to get stronger, joints must be exposed to motion in order to remain mobile, and balance must be challenged in order for it to be maintained.

Before adding system inputs, it's wise to begin by first removing inputs that are directly causing problems. By subtracting root cause behaviours, human biology immediately begins restoring itself to health regardless of age or current state of function. Natural lower extremity function can be defined as a strong, stable, mobile, resilient lower body that is free of longstanding pain. If the desired outcome is natural lower extremity function, the body must be protected from unnatural inputs and exposed to natural inputs.

As the foundation of the human body and primary sensor for the lower extremity, feet are incredibly important and must be protected with footwear that respects their function. Feet are not designed to be covered with shoes that disable their function and damage their structure. The output of wearing shoes that are stiff, supportive and pointed is a foot that is stiff, weak and deformed. The output of wearing shoes that are foot shaped, flat, and flexible is a foot that is naturally shaped, strong and mobile.

Returning to first principles enables a return to effectiveness. By reasoning from first principles, individuals can orient their efforts around the elimination of unnatural inputs and the addition of natural inputs in order to restore their body back to it's natural, healthy settings.

## 5. Time Preference

Time preference describes our temporal orientation when making decisions. High time preference thinking prioritizes the present moment, whereas low time preference thinking delays present gratification and places more emphasis on the future. The pursuit of health is a long term endeavour that requires individuals to adopt low time preference thinking in order to make meaningful long term progress.

Viewing pain as an enemy to be eliminated is a high time preference perspective. Disease care creates incentives that orient professionals towards offering short term pain reduction at the expense of long term health and function. In contrast, viewing pain as an essential signal to be respected and learned from is a low time preference perspective that allows humans to work with instead of against their biology. By modifying how they view pain, individuals become empowered to explore what is causing the pain and to make lifestyle changes to eliminate the root causes. Healthcare incentivizes educating individuals and helping them make sustainable long term lifestyle changes that improve health and function.

Disease care incentives reflect a high time preference culture built on easy money. Healthcare incentives reflect a low time preference culture built on hard money.

Money is a tool humans use to store and preserve their time for future consumption and the hardness of the money individuals adopt serves as a control knob for their time preference. By adopting hard money, individuals protect their time so that they have time to learn how the body works and care for it by aligning their lifestyle with their biology. The most powerful way to lower time preference is to save in bitcoin [3] - the hardest form of money ever created by humans.

## 6. Systems Thinking

Thinking in systems allows us to make sense of complex human biology. Understanding is gained by looking at the body through a holistic frame of reference and considering relationships rather than oversimplifying into isolated parts. Our team initially set out to develop a foot health protocol and realized that in doing so, we ended up creating a lower extremity health protocol. The lower extremity is an integrated system which receives inputs and adapts specifically to generate predictable outputs. When troubleshooting the lower extremity, individuals should begin by removing behaviours which are negatively affecting the system and secondarily, adding behaviours that optimize the system.

The function of the lower extremity is a product of the interactions between different parts. Attempting to modify the arch of the foot without considering the impact of the hip on foot position is naive and far too simplistic to achieve meaningful long term results. Systems thinking invites us to understand the interconnectedness of subsystems and feedback loops that govern how our bodies adapt. If the lower extremity is an integrated system, interventions that isolate bodyparts no longer make any sense if the objective is to achieve improved function and resilience long term.

## 7. Unnatural inputs

First, do no harm. By reducing unnatural inputs, we address the root causes of lower extremity dysfunction. When the harmful behaviours are reduced, the lower body system has an opportunity to recalibrate and heal.

The root causes of lower extremity dysfunction are unnatural footwear and excessive chair sitting but the negative consequences of these normalized behaviours are currently widely under-appreciated and misunderstood by individuals and professionals. These inputs create unnatural constraints on the lower body which lead to harmful adaptations that degrade function and resilience and increase risk of injury over time. Through improved awareness and understanding, individuals are empowered to make better decisions and professionals are able to offer effective guidance to those they serve. Like many things, the negative consequences of unnatural footwear and chair sitting are not derived from the inputs themselves but the dosage to which individuals are exposed to them. Spending a few hours in unnatural shoes may not result in harm but spending 8 hours a day everyday in shoes that disable and damage one's feet will have serious long term consequences on foot health and overall lower extremity function. Improved lower body health is the output of consistently reducing exposure to unnatural behaviours that harm the body. A reasonable aspiration is to move towards spending 10% or less of waking hours wearing unnatural footwear or sitting in chairs.

When foot protection is needed, individuals should wear footwear that respects the shape and function of their feet. An effective heuristic for identifying natural footwear is the five F's: Foot shaped, Flat, Flexible, Feel, Fixed. By wearing shoes that are widest at the toes, zero drop, flexible, have a thin sole and are fixed to the foot, individuals foster natural motion and loading of their feet. For a deeper exploration of features found in unnatural and natural footwear, see the footwear resource reference [1].

Prolonged periods of time sitting in chairs creates imbalances at the hip joint, impairs balance and de-calibrates the lower extremity from optimal function. Replace chair sitting time with walking, standing, or sitting on the ground.

Best practice for health professionals is to recommend natural footwear and a reduction in chair sitting to individuals they serve. The 80/20 rule holds merit in this case. If individuals are barefoot or wearing natural footwear and staying out of chairs 80% or more of their waking hours, significant progress will result over time.

## 8. Natural inputs

After reducing unnatural inputs, the next step is to progressively add more natural inputs to the system. For the lower extremity, three natural inputs are essential: walking, time in a squat and time on the ground. By understanding the value of these essential behaviours, individuals can focus their time on the few valuable behaviours and ignore the many trivial behaviours that can be found on the internet.

Developing a healthy lower body is about gradually moving in the direction of better inputs. The amount of time individuals spend walking, in a squat or on the ground matters much less than the fact that they are doing those things consistently and in increasing doses over time. By replacing sitting in chairs with time on the ground, we eliminate an unnatural input and replace it with a natural one that upgrades our lower body function.

Walking barefoot or in natural footwear is one of the simplest and most fundamental human behaviours. One could almost say that to walk is to be human. While the positive effects of walking as an input to recalibrate the lower body is largely underestimated, it is one of the most powerful inputs to restore lower extremity health. In addition to its positive physical benefits, going for a walk is accessible to almost everyone and costs nothing. It's important to note that the recalibration benefits of walking are impaired by unnatural footwear so it's important to walk in natural footwear or barefoot when able. Best practice for health professionals is to recommend walking, reclaiming a resting squat position and time on the ground to individuals they serve.

## 9. Application

This health protocol is behavioural software for human hardware that optimizes for strength, stability, resilience and adaptability of the lower extremity. The protocol includes fundamental behavioural principles that must be applied by individuals in order to make meaningful progress in restoring lower extremity health. Our hope is that individuals don't blindly trust protocol effectiveness, but will instead run the software and validate it experientially. Widespread peer validation is necessary to strengthen consensus that Apollo is an effective path to a healthier and more resilient lower body.

Knowledge refers to the acquisition of information and facts, while wisdom involves the application of knowledge along with experience, insight and good judgement. While understanding fundamental principles is essential, wisdom is required for effective application. Protocol principles are low time preference, removal of unnatural inputs and addition of natural inputs. All principles must be considered for long term effectiveness but application will vary greatly and should always be individualized. Our focus of ongoing development will be creating specific application primitives and sharing case examples of individuals and organizations successfully integrating Apollo.

To support successful long term application of the protocol, we refer readers to understand and apply the Fogg behaviour model [4]. Developed by behaviour design scientist BJ Fogg, the model states that for a behaviour to occur, three elements must converge: motivation, ability and prompt. Understanding the recipe for consistent behaviours enables individuals to successfully apply protocol principles.

Health professionals are expected to validate protocol effectiveness by applying it in their lives before integrating principles into their practice. Doing so enables them to gain an experiential understanding of how to successfully apply the principles and the ability to advocate protocol application from a place of integrity. The protocol is a set of foundational principles derived from first principles that must be respected for effective results long term. It is not prescriptive medical advice.

Individuals can signal to others on social media that they are running the protocol by writing “running apollo”. The expression is a tribute to the infamous twitter post "running bitcoin" made by Bitcoin legend Hal Finney to indicate he was running the Bitcoin software.

## 10. Consensus

Truth by consensus is superior to truth by authority. By establishing generally accepted principles for lower extremity health, we enable improved effectiveness among health professionals and a better signal of truth for individuals. To our knowledge there is currently no open source lower extremity education resource that is simple, practical, grounded in first principles and broadly applicable. Such a resource would be extremely valuable as a tool for individuals who wish to reclaim responsibility for their lower extremity health.

There is currently much confusion and lack of consensus agreement among professionals who treat lower extremity dysfunction. While we acknowledge the merits of academic peer review as a method of evaluating the validity and quality of research, we also acknowledge the shortcomings of traditional peer review including perverse funding incentives and poor application relevance to broad populations. Our solution to the problems of traditional peer review is to achieve consensus from peers who apply the protocol and signal agreement. By applying the principles, individuals can experientially validate the software and signal their agreement with a formal endorsement or simply posting “running apollo” on social media. By integrating the principles into their lives first and practice second, professionals can validate protocol effectiveness and then help others by sharing their experience. A focus on first principles is lacking within disease care education institutions which has led to treatment approaches that are ineffective at best and harmful at worst when unintended long term consequences are honestly considered.

A sign of professional competence is the ability to remain curious and to change one's mind when new information presents itself. In the 1950's it was acceptable for doctors to prescribe cigarettes to their patients. As a culture we have since changed our minds and today it would be considered unethical and reputationally intolerable for a doctor to recommend cigarettes. Knowing what we know today, it would be considered negligent to fail in warning patients against the dangers of smoking. Knowing what we know today about the lower extremity, it is equally negligent for any health professional to fail in warning those they serve about the dangers of unnatural footwear and chair sitting.

Through peer validated consensus, we aspire to create foundational best practices that govern how we approach the prevention and resolution of lower extremity dysfunction. If you would like to validate and formally endorse Apollo, please email [nick@thefootcollective.com](mailto:nick@thefootcollective.com). If you are benefiting from Apollo, please share [www.RunningApollo.com](http://www.RunningApollo.com) with friends, family and health professionals.

## 11. Incentives

Charlie Munger said "*Show me the incentive and I'll show you the outcome*". The quote illustrates that incentives are the hidden forces that govern human behaviour. Whether obvious or hidden, they are always present and their impacts are significant.

As we shift from disease care to healthcare, new social and financial incentives will emerge. In a culture of personal responsibility and truth, it will be profitable to be effective and efficient at helping individuals restore health. In the context of the lower body, businesses and professionals who build products and services that support successful application of fundamental principles will succeed.

The responsibility of health professionals is to remain informed and up to date on current knowledge and best practices. To ignore new information and updated protocols is both unethical and unprofessional. Failing to educate patients on the harmful effects of unnatural footwear and excessive chair sitting is akin to failing to educate patients about the harmful effects of smoking cigarettes and consuming excessive alcohol. Within an educated population, social and reputational incentives will economically reward effectiveness and punish ineffective or harmful products and services.

Upton Sinclair said "*It's difficult to get a man to understand something, when his salary depends on his not understanding it*". In the legacy paradigm of disease care, professionals are financially incentivized to treat symptoms of dysfunction with complex, expensive interventions that are ineffective or worse. The incentive to treat without regard for effectiveness or long term results is a perverse incentive causing wasted resources, and an implicit dis-incentive to help people understand and resolve issues by addressing root causes. Until the current reality is acknowledged, it will be difficult to move beyond it.

Monetary incentives are important because professionals must generate income in order to pay their bills, feed their families and run viable business ventures. While the desire to effectively help others may be strong, when placed in opposition to financial incentives, professionals understandably default to doing what they get paid for regardless of their desires to help people improve their health.

The uncomfortable truth is that disease care professionals who are trained to treat symptoms of lower extremity problems and are paid to do so are incentivized to remain ignorant. To change how disease care professionals understand lower extremity health, it is necessary to offer alternative ways to generate income. Humans are naturally dis-incentivized from believing anything that is in opposition to their current beliefs, especially if a lot of time, energy and money was spent acquiring those beliefs. Disease care degrees creates a false sense of confidence and a blind spot for many professionals. The sunken costs of acquiring those degrees also creates strong friction to dropping knowledge learned that may no longer be useful.

Adopting an effective lower extremity health protocol enables the creation new economic incentives and imposes new social and moral incentives that affect reputation. The practice of healthcare offers professionals new psychological incentives contributing to increased satisfaction and meaning in their work because they are helping people improve their health instead of simply treating symptoms without addressing the issue. Disease care professionals can either transition into healthcare or they will be replaced by a new generation of healthcare providers who practice what they preach and offer value by guiding individuals towards successfully applying consensus protocols in their lives.



## 12. Conclusion

We have proposed a simple protocol for optimizing lower extremity function that can be applied by individuals without relying on disease care professionals. We started by identifying the awareness gap with regard to the lower extremity and the perverse incentives created by the current disease care system. By reasoning from first principles of biology that we know to be true, we've distilled simple and clear fundamental principles that must be applied to effectively restore natural lower extremity function. We acknowledged the paradigm shift to hard money as an accelerant to the shift from centralized disease care to decentralized healthcare built on personal responsibility. By lowering time preference, adopting systems thinking, reducing unnatural inputs and adding natural inputs, individuals are capable of independently restoring a healthy lower body.

In order to achieve consensus among health professionals as best practice, the protocol must be applied, scrutinized and validated by peers. If you run this software and get value from it, please consider supporting ongoing develop and propagation. If you know someone struggling with lower extremity issues, please send them to [www.RunningApollo.com](http://www.RunningApollo.com). If you wish to formally endorse the protocol or need help applying it in your practice, business or institution, please send a message on nostr [5] or email [nick@thefootcollective.com](mailto:nick@thefootcollective.com). If you are a health professional, we hope you will consider applying, validating, critiquing and integrating Apollo into your life and practice.

## References

- [1] Footwear\_resource ([https://github.com/LEHP829388/Building\\_Apollo/blob/main/X.footwear\\_resource](https://github.com/LEHP829388/Building_Apollo/blob/main/X.footwear_resource))
- [2] Glossary of terms ([https://github.com/LEHP829388/Building\\_Apollo/blob/main/X\\_glossary\\_resource](https://github.com/LEHP829388/Building_Apollo/blob/main/X_glossary_resource))
- [3] Bitcoin Whitepaper (<https://bitcoin.org/bitcoin.pdf>)
- [4] Fogg behaviour model (<https://behaviourmodel.org>)
- [5] nostr client ([www.primal.net](http://www.primal.net))