

# Effects of E(e)SEEDi as a “super-vaccine” on blood, cardiac, vascular health and its macro-mechanisms

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## Abstract

There has been a significant increase in unexpected deaths due to major adverse cardiocerebrovascular events (MACCE) in the post-COVID-19 era. How to effectively control and prevent these events and adverse clinical outcomes is a vital topic in the globe. Since the innovative “magic polypill” or E(e)SEEDi plays a crucial role in human health and longevity, it just likes a “super-vaccine” due to improvement of immunity and prevention of cardiovascular diseases (acute myocardial infarction, venous thrombosis, stroke and sudden cardiac death), as well as diabetes and cancer. Additionally, it can benefit the health of individuals who are more prone to have unhealthy lifestyle. The interconnected nature of these factors, as explained by game theory, may contribute to the increased risk of MACCE and understanding related macro-mechanisms. In conclusions, as a “super-vaccine” with crucial effects on blood and vascular health, the E(e)SEEDi helps prevent MACCE among individuals, particular young and middle-aged those.

Review

**Effects of E(e)SEEDi as a “super-vaccine” on blood, cardiac, vascular health and its macro-mechanisms**

**Running title:** E(e)SEEDi & Its macro-mechanisms

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**Abstract**

There has been a significant increase in unexpected deaths due to major adverse cardiocerebrovascular events (MACCE) in the post-COVID-19 era. How to effectively control and prevent these events and adverse clinical outcomes is a vital topic in the globe. Since the innovative “magic polypill” or E(e)SEEDi plays a crucial role in human health and longevity, it just likes a “super-vaccine” due to improvement of immunity and prevention of cardiovascular diseases (acute myocardial infarction, venous thrombosis, stroke and sudden cardiac death), as well as diabetes and cancer. Additionally, it can benefit the health of individuals who are more prone to have unhealthy lifestyle. The interconnected nature of these factors, as explained by game theory, may contribute to the increased risk of MACCE and understanding related macro-mechanisms. In conclusions, as a “super-vaccine” with crucial effects on blood and vascular health, the E(e)SEEDi helps prevent MACCE among individuals, particular young and middle-aged those.

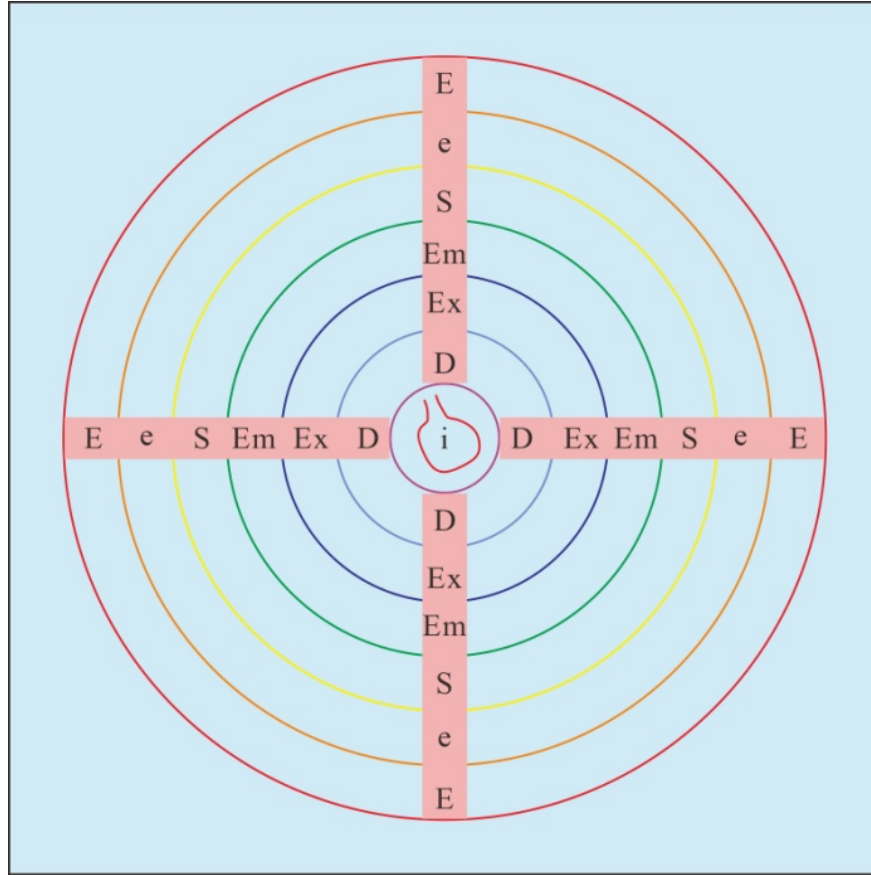
**Keywords:** E(e)SEEDi lifestyle, Human immunity, Macro-mechanisms, Major adverse cardiocerebrovascular events, Venous thrombosis

### Highlights

- There are more and more unexpected deaths due to major adverse cardiocerebrovascular events (MACCE).
- The “magic polypill” which covers “health essential (HE) 5”, that is “environment-sleep-emotion-exercise-diet” intervention [E(e)SEEDi], plays a crucial role in human and mass health.
- It just likes a “super-vaccine” due to improvement of human immunity and prevention of MACCE by changing unhealthy lifestyle associated risk factors.
- As the “super-vaccine”, the E(e)SEEDi has a great effects on blood, cardiac, vascular health by game theory related macro-mechanisms.

### INTRODUCTION

The innovative “magic polypill”<sup>1</sup> which covers the “health essential 5 (HE 5)”, is composed of “environment-sleep-emotion-exercise-diet” intervention [E(e)SEEDi] (Figure 1) lifestyle. As a “Shared Community of HE”, it is the health talisman and longevity guardian of the entire life cycle for the global residents.



**Figure 1** As A Digital Therapy in the New Era, the “Magic Polypill” or E(e)SEEDi As A “Virtual Agent” Would Be the “Amulet” and “Guardian” of Cardiovascular Health. It plays a crucial role on blood and cardiac and vascular system due to covering the “health essential 5 (HE 5)”, that is “environment-sleep-emotion-exercise-diet”. Here, E: external environment; e: internal environment; S: sleep; Em: emotion; Ex: exercise; D: diet; i: intervention.

Health is the first capital. Health is “1”, everything else is followed by “0”. No matter who, no matter what identity or status, with the “1” of health, the “0” of others will be meaningful. In this sense, the “magic polypill” or E(e)SEEDi is something that everyone around the world needs and is the foundation of their successful career. Herein, it is both medical and sociological. Moreover, the “magic polypill” or E(e)SEEDi is worth conducting and vigorously promoting globally, which will be beneficial for the construction of both beautiful China and the world.

As a combinatorial and frugal innovation<sup>2</sup> with significant translational application, and as an innovative discovery of the “Shared Community of HE”, the “magic polypill” or E(e)SEEDi provides scientifically effective and low-cost solutions for global health, and a vital methodological support for human sustainable high-quality development in the globe.

**Effects of E(e)SEEDi as a “super-vaccine” on blood, cardiac, and vascular health**

According to the recent reports of we media in China, there were a series of death cases among talented individuals due to cancer, sudden diseases and major adverse cardiocerebrovascular events (MACCE), such as acute myocardial infarction (AMI), stroke, sudden cardiac death (SCD), venous thrombosis (VT). People may feel very sad or even shed thousands of tears, but more importantly, how to effectively curb the

premature death of young and middle-aged talents one after another? Actually, good internal and external environment, enough sleep time and good quality, happy emotion, aerobic exercise, and reasonable and balancing diets, are helpful in prolonging healthy lifespan. An updated study showed that sleep quality indeed highly links to cardiovascular disease (CVD) risk and mortality.<sup>3</sup> It also supports that sleep is a core element of cardiovascular health. Herein, the innovative “magic polypill” or E(e)SEEDi as one of novel strategies<sup>4</sup> is actually a “super-vaccine” for human health or mass health,<sup>5</sup> particular cardiovascular health due to improvement of lifestyle and immunity.<sup>6</sup>

As we all know, CVD remains the most deadly condition and the big burden and challenges of public health in the globe.<sup>7</sup> Both the number of global CVD deaths and the total number of disability-adjusted life years due to stroke steadily increased since 1990.<sup>8</sup> Currently, there are around 330 million CVD cases in China due to unhealthy lifestyle and related risk factors.<sup>9</sup> In fact, five modifiable risk factors highly link to incident CVD and deaths.<sup>10</sup> And cardiovascular mortality far exceeds that of COVID-19 infection, but people’s awareness of preventing MACCE is almost “numb”. Perhaps it is a new normal, few individuals are truly aware of the risk of MACCE, in particular the pandemic and post-COVID-19 era.<sup>11,12</sup> In fact, existing CVD (e.g., hypertension) links to critical cases.<sup>13</sup> Sincerely and frankly speaking, it’s believed that the economic and social benefits of the “magic polypill” or E(e)SEEDi in preventing MACCE actually exceed the role of mRNA vaccines in COVID-19 infection.

Since COVID-19 infection had been effectively controlled, it can be said that it was the SARS-CoV-2 infection that has made today’s mRNA vaccines (2023 medicine **Nobel** ).<sup>14</sup> Similarly, year after year, day in day out, there were one case after another of young and middle-aged talents’ deaths due to their unhealthy lifestyle related MACCE. And in fact, these MACCE are more ferocious life “killers”. Thus, this combinatorial and frugal innovations may have a big success due to these talents’ unexpected MACCE. Therefore, it’s easy to understand that the “magic polypill” or E(e)SEEDi is a “super-vaccine” for human health, particularly young and middle-aged talents’ health due to improvement of lifestyle and immunity by the role of the “HE 5” including good diets, e.g., marine natural products (MNPs) with **taurine**<sup>15,16</sup> and **traditional Chinese medicine (TCM, e.g., Tongxinluo)**<sup>17</sup> for cardiovascular health.

An updated definition of health<sup>18</sup> is that “good health is characterized by physical and psychological well-being and is associated with vitality”. In the post-COVID-19 era, self-care<sup>19</sup> is indeed crucial to individual’s cardiovascular health. Since unhealthy lifestyle are associated with higher levels of oxidative stress,<sup>20</sup> anxiety and depression are associated with less ideal cardiovascular health in young adults.<sup>21</sup> In fact, anxiety and depression are common high-risk conditions in patients with chronic diseases,<sup>22</sup> and especially CVD. However, the healthy E(e)SEEDi lifestyle, for example, a high sleep quality, a regular moderate-intensity exercise or physical activity, Mediterranean diet, and smoking cessation,<sup>23,24</sup> is beneficial for prevention of anxiety and depression and stress-induced cardiovascular events, and is correlated with lower cardiovascular risk under relieving these conditions. Herein, the healthy E(e)SEEDi lifestyle may improve both emotion and cardiovascular health.

In fact, as standard preventive therapies, adults with elevated coronary artery calcium<sup>25</sup> should have the healthy E(e)SEEDi lifestyle so as to lower risk and delay onset of CVD. Both childhood and adulthood adversities<sup>26</sup> associated risk of CVD later in life may be effectively prevented by the healthy E(e)SEEDi lifestyle. A recent study found that gamma-aminobutyric acid supplementation<sup>27</sup> may elicit noteworthy enhancements in heart rate variability, emotional response, depression mitigation, and sleep efficiency. Whatever, previous practice confirmed that “more intensive effort in lifestyle modification, more significant additional benefit in CVD prevention”.<sup>28</sup> For example, active lifestyle and fitness were protective role on increased post-exercise albuminuria with hypertension.<sup>29</sup> In fact, adherence to a healthy lifestyle may positively influence levels of endothelial progenitor cells and exercise capacity.<sup>30</sup> But unhealthy lifestyle (chronic pain, sleep problems, bad emotion, and lack of exercise) may present as cognitive risk factors in former football players.<sup>31</sup>

As we know, inhibitors of antiapoptotic proteins BCL2 and MCL1,<sup>32</sup> the first approved Venetoclax (a specific inhibitor of BCL2) and the developing BH3 mimetics targeting MCL1, have promising roles in treatment

of hematologic malignancies. However, “the magic polypill”, that is the E(e)SEEDi, has a crucial value in the prevention of mNCDs (VT, CVD, diabetes, and cancer) including hematologic malignancies, since just like the Inmazeb (REGN-EB3),<sup>33</sup> a three-antibody cocktail against Ebola virus, current data support the benefit of the E(e)SEEDi as “a cocktail” for mNCDs, particularly blood and vascular health. As a common, simple and effective biomarker, neutrophil number<sup>34</sup> is widely used in clinical practice for evaluation of individuals’ conditions. Just as new drugs and paradigm-changing innovations,<sup>35</sup> the E(e)SEEDi lifestyle may keep human blood and vascular in better conditions.

### **E(e)SEEDi originated from inheritance and innovation**

In fact, it is easy to know that through this wonderful combination, the “magic polypill” or E(e)SEEDi can effectively enhance human immunity and prevent human major non-communicable diseases (mNCDs) including VT, CVD, stroke, diabetes, cancer and others. Moreover, most organisms in nature, including animals and plants,<sup>36</sup> also need the “magic polypill” or E(e)SEEDi.

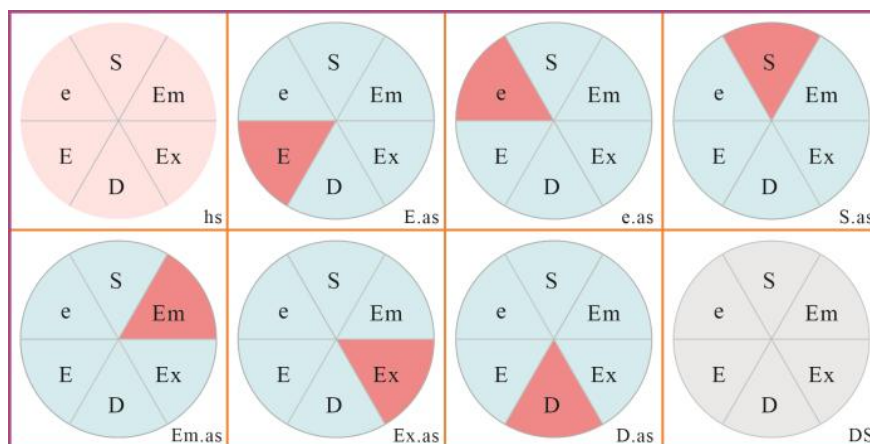
By retrospective analysis, we can find that the “magic polypill” or E(e)SEEDi has both heritage and innovation. It not only inherits the health wisdom, health philosophy, health quotes, health discourse and health methods of ancient and modern sages at home and abroad, but also can be said to be “integrated in one”, through this wonderful combination, forming the current amazing “Shared Community of Human Health Essentials”.

A rational analysis reveals that the “magic polypill” or E(e)SEEDi originated from a long history and cultural accumulation, and it has sufficient previous work on the health and wellness practices of ancient and modern Chinese and foreign ancestors. From a macro-perspective, it is one of the vital core technologies of current Combinatorial Biomedicine<sup>37</sup> that is tangible and high-level innovation. Through forward-looking analysis, it can provide strong methodological support and reliable health care services for the construction of a healthy China as well as global health in the new era.

### **Macro-mechanisms of E(e)SEEDi on blood, cardiac, and vascular health**

According to the perspective of traditional Chinese medicine, the “magic polypill” or E(e)SEEDi can enhance the body’s Yang Energy (Yang Qi), which is also an important component of the internal environment of the human body. In fact, the “magic polypill” or E(e)SEEDi can improve the internal environment and human immunity by enhancing Yang Qi of the human body, play a protective role in cardiovascular and cerebrovascular health, and prevent MACCE as well as mNCDs including CVD, diabetes and cancer.

Because the “HE 5” interact, influence, and balance each other, they consist of the “Shared Community of Human Health Essentials”. According to “Game Theory” and “Nash Equilibrium Theory”, a change in one element will affect the other four elements, while also being influenced by the other four elements. Herein, in clinical practice, major adverse events and human diseases related to one of the “HE 5” can be treated and prevented by regulating and improving the other four elements. Here are possible macro-mechanisms (Figure 2).



**Figure 2** Possible macro-mechanisms of the “magic polypill” or E(e)SEEDi.

A change in one element will affect the other four elements, while also being influenced by the other four elements. Here, E: external environment; e: internal environment; S: sleep; Em: emotion; Ex: exercise; D: diet; hs: healthy status; E.as: abnormal status of external environment; e.as: abnormal status of internal environment; S.as: abnormal status of sleep; Em.as: abnormal status of emotion; Ex.as: abnormal status of exercise; D.as: abnormal status of diet; DS: dying status.

For example, insufficient Yang Qi in the internal environment of the human body can be regulated and improved through the external environment, sleep, emotion, exercise, and diet. A study showed that the levels of free testosterone and sex hormone-binding globulin are associated with high risk for incident cardiovascular events (such as AMI, stroke, and SCD) in middle-aged men.<sup>38</sup> Herein, people should keep enough physical activity and rational diets so as to enhance the levels of these biomarkers. Another example, if individuals have sleep disorders or insomnia, they should improve their internal and external environment, emotion, exercise, and dietary regulation. A recent study indicated that individuals with persistent physical activity have better sleep quality than those inactivity.<sup>39</sup> This means that exercise may treat insomnia and counter poor sleep quality. If subjects have depression or anxiety related to negative emotions, they may regulate and cure these symptoms by improving their internal and external environment, sleep, exercise, and diet.

In addition, there is a typical example that can explain the interrelated effects of the “HE 5”. A “vegetative person”, which can be understood as a “super-sleeper”, with almost zero reactions in terms of internal and external environment, emotion, exercise, and autonomous diet. Herein, subjects’ sleep aspect rises to the extreme, actually, seems a state of “long-term sleep”. Therefore, people can easily understand these macro-mechanisms of the “magic polypill” or E(e)SEEDi and its effects on human health. Actually, there is often a phenomenon of “one thing falling one thing” in nature. For example, a study found that heat shock protein 47 links to immobility-associated protection of venous thromboembolism in cross-species.<sup>40</sup> This can also be described as the “Nash equilibrium”.

In fact, currently, all surgical treatments can be understood as “improvement of human internal environment”, and all agent treatments can be understood as “generalized dietary therapy”, since any drug is also a “generalized food” for intake to treat human diseases. As we know, traditional Chinese medicine has the concept of “medicine and food having the same origin”. Herein, the “magic polypill” or E(e)SEEDi is indeed a “super-vaccine” and a “super-therapy”. And it should be positively conducted in current clinical practice (Table 1). For example, we may adjust self-emotions through behaviours and activities of our main organs “brain-ears-eyes-foots-hands-legs-mouth-nose” for major mental disease including anxiety and depression (Table 2).

## CONCLUSIONS AND FUTURE PERSPECTIVES

In conclusion, healthy lifestyle is helpful in better prevention of VT development and its complications without agents' bleeding risk<sup>44</sup> and impairment of the bone marrow microenvironment and hematopoiesis as **Vitamin K antagonism**.<sup>45</sup> Moreover, healthy lifestyle may also delay IL-1 mediated aging<sup>46</sup> and pathologies of hematopoietic stem and progenitor cells.<sup>47</sup> The “magic polypill” or E(e)SEEDi is a “super-vaccine” in the pandemic and post-COVID-19 era for human health due to improvement of lifestyle and human immunity, and prevention of MACCE, such as AMI, stroke, SCD, and VT. For example, more healthy diets and balancing nutrition intake including anti-aging foods, TCM,<sup>48</sup> and MNPs<sup>15</sup> with taurine<sup>16</sup> (such as eggs, fishes, fruits, nuts, vegetables, milk, meat, and olive oil). With the help of a new function of iRT-ABCDEFG program<sup>49</sup> as a novel tool for evaluation of human nutrition status (Table 3), people will do better in protection of individual health. And it's very helpful in the talents' health, since most of young and middle-aged talents have often unhealthy lifestyle.

In fact, in the field of biomedical research and development, virtual reality (VR) is receiving increasing attention and showing a rapid developing trend. For example, there was an updated perspective article on the creation of “AI virtual cells (AIVC)” in the *Cell* journal.<sup>50</sup> It can be seen that, as the world's first “virtual agent (VA)” in the *European Heart Journal* in 2018, the author's innovative “magic polypill” [E(e)SEEDi] has a broad prospect of development and application as a digital therapy, which will be very beneficial for global health. Moreover, as the combinatorial and frugal innovation in the new era, it is also a big discovery of the “Shared Community of Human Health Essential”. The E(e)SEEDi can become a crucial support for the global sustainable development goals (SDG), and have a significant practical application. It's also a highly effective strategy and feasible innovative technology, which is suitable for human health and longevity. “Nothing is impossible to a willing heart”. It's believed that more people will be beneficial from the “magic polypill” [E(e)SEEDi], and beautiful wishes can be a reality in the future.

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## DECLARATION OF INTERESTS

The author declares no competing interests.

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**Table 1.** The “magic polypill” or E(e)SEEDi as a “super-vaccine” and a “super-therapy” for human diseases.

<b>E(e)SEEDi</b>	<b>Related human diseases</b>
External environment	Air pollution, noise or e-noise (41), and radiation related mNCDs (CVD, diabetes, and cancer as w
Internal environment	Acute or chronic infection and inflammation, high blood pressure or hypertension, high blood sugar
Sleep	Insomnia and/or sleep disorders, such as obstructive sleep apnea (OSA) or others.
Emotion	Negative emotions (such as depression or anxiety)
Exercise	Physical inactivity, decreased muscle strength, and others
Diet	Decreased appetite, indigestion, and others.

**Table 2.** Adjusting emotions through behaviours and activities of human main organs “brain-ears-eyes-foots-hands-legs-mouth-nose” for major mental disease including anxiety and depression.

<b>Human Main Organs</b>	<b>Behaviours and Activities</b>
Brain	Meditation
Ears	Listen to music
Eyes	Appreciate the beautiful scenery Watching comedy and interesting movies
Foots	Walking and jogging
Hands	Writing, drawing, embroidery, jigsaw puzzle and massaging
Legs	Long distance running
Mouth	Balancing diet (low salt, high K+, Ca++, Se, Zn, high fruits and vegetable intake, and high qua
Nose	Frequently smelling fragrant odors Frequent deep breathing

**Table 3.** A new iRT-ABCDEFGF program as a novel tool for evaluation of human nutrition status.

<b>iRT-ABCDEFGF</b>	<b>Content and Nutritional Elements</b>	<b>Related Foods</b>
G	Goals: more healthy & balancing nutrition intake from diets and foods	
F	Fatty acids (unsaturated) Fe Fibre Folic acid	Fishes (deep sea fishes) E
E	Vitamin E	Eggs of chicken, duck, go
D	Vitamin D	Deep sea fishes (marine r
C	Ca Compound Trace Elements (Cu, Cr, Co, Mg, Mn, Se, Zn) Vitamin C	Compounds from coffee,
B	Vitamin B (B1, B2, B6, B12)	Broad spectrum of eggs,
A	Amino acid Vitamin A	Anti-aging diet and food
iRT	ideal and Reliable Trace elements and TCM (traditional Chinese medicine)	ideal Red wine and vario