

# What can we learn from “blue zones”?

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**Figure 1:** The six geographical regions designated as “blue zones” by Dan Buettner and Blue Zones LLC. The five “original” blue zones are shown in black, while Singapore, which was added to the list in 2023, is shown in gray.

For millennia, the nearly universal desire to live a long life has spurred efforts to identify means of doing so. One approach that has been growing in popularity over the last two or three decades involves emulating the lifestyles of certain regions and populations in which a relatively high proportion of individuals live exceptionally long lives. These areas have come to be known as “blue zones” and have inspired an entire industry centered around identifying and sharing their alleged “secrets” to longevity. But what exactly are these so-called secrets, and how well do they stand up against other evidence with respect to their ability to promote longer, healthier lives? In this article, we address these questions and more as we seek to separate fact from fiction in the narratives and data arising from the blue zones.

## What are “blue zones”?

Broadly speaking, a blue zone is a geographical region where residents tend to exhibit exceptional longevity. The term was coined in the early 2000s by researchers who documented an unusually high prevalence of centenarians (people living to at least 100) among the population of central Sardinia in Italy. According to the scientists, the area was given the designation of “blue zone” simply because they had “originally delineated [it] using a blue marker” during their investigations.<sup>1</sup> But the term was subsequently adopted by author and National Geographic Fellow Dan Buettner to refer more broadly to *any* region of exceptional longevity, which Buettner himself (along with various collaborators) then sought to discover and characterize around the globe.

These efforts led to the identification of five blue zones: Sardinia, Italy (and more specifically, the Nuoro Province); Ikaria, Greece; the Seventh-day Adventist community of Loma Linda, California (USA); Nicoya, Costa Rica; and Okinawa, Japan (see **Figure 1**). These regions have since been the subject of countless scientific papers, several books (including several by Buettner, who is largely credited with introducing the concept to the general public), and even a Netflix documentary series titled *Live to 100: Secrets of the Blue Zones* (co-produced by and featuring Dan Buettner). In addition to the five regions listed above, the docuseries also features the city-state of Singapore as a sixth area to be granted the designation of “blue zone.”<sup>2</sup>



**Figure 1:** The six geographical regions designated as “blue zones” by Dan Buettner and Blue Zones LLC. The five “original” blue zones are shown in black, while Singapore, which was added to the list in 2023, is shown in gray.

But what exactly *defines* “exceptional longevity”? Blue Zones LLC, a marketing company founded by – you guessed it – Dan Buettner, has set three criteria for an area to be considered a true blue zone.<sup>3</sup> To paraphrase these criteria:

1. Longevity of residents within the blue zone should be supported by thorough, reliable documentation.
2. The nation in which the blue zone exists should, as a whole, rank highly among world nations in longevity, as assessed by various indicators such as average life expectancies and population age.
3. A specific geographical area where the population exhibits greater longevity than the rest of the country may be designated as a blue zone, assuming criteria (1) and (2) are fulfilled.

The specific metrics by which a blue zone might demonstrate exceptional longevity are varied. They include, for instance, life expectancy at birth, life expectancy at a given adult age (50, 60, etc.), and probability of living to a particular advanced age (80, 90, 100, etc.). Further, differences between sexes in these metrics are also taken into consideration. Males and

females in potential blue zones ideally exhibit roughly equivalent life expectancy and probability of surviving to a given age, as this would indicate that the longevity associated with the region of interest is not dependent on sex and applies more or less equally to the entire population.

As an example, we can turn to the original 2004 data identifying a “blue zone” in the Nuoro Province of Sardinia. The authors report that the prevalence of centenarians across all of Europe at the time was approximately 10 per 100,000 inhabitants, with female-to-male ratios among centenarians typically around 5 to 1. The entire nation of Italy exceeded this average, with 14.1 centenarians per 100,000 inhabitants and a female-to-male ratio of 3.8 to 1. Sardinia was better still, with 16.6 centenarians per 100,000 inhabitants and a female-to-male ratio of 2.7 to 1, but when looking specifically at the Nuoro Province, the number of centenarians jumped to 17.9 per 100,000 inhabitants and a female-to-male ratio of just 1.4 to 1.<sup>1</sup>

## More than genetics?

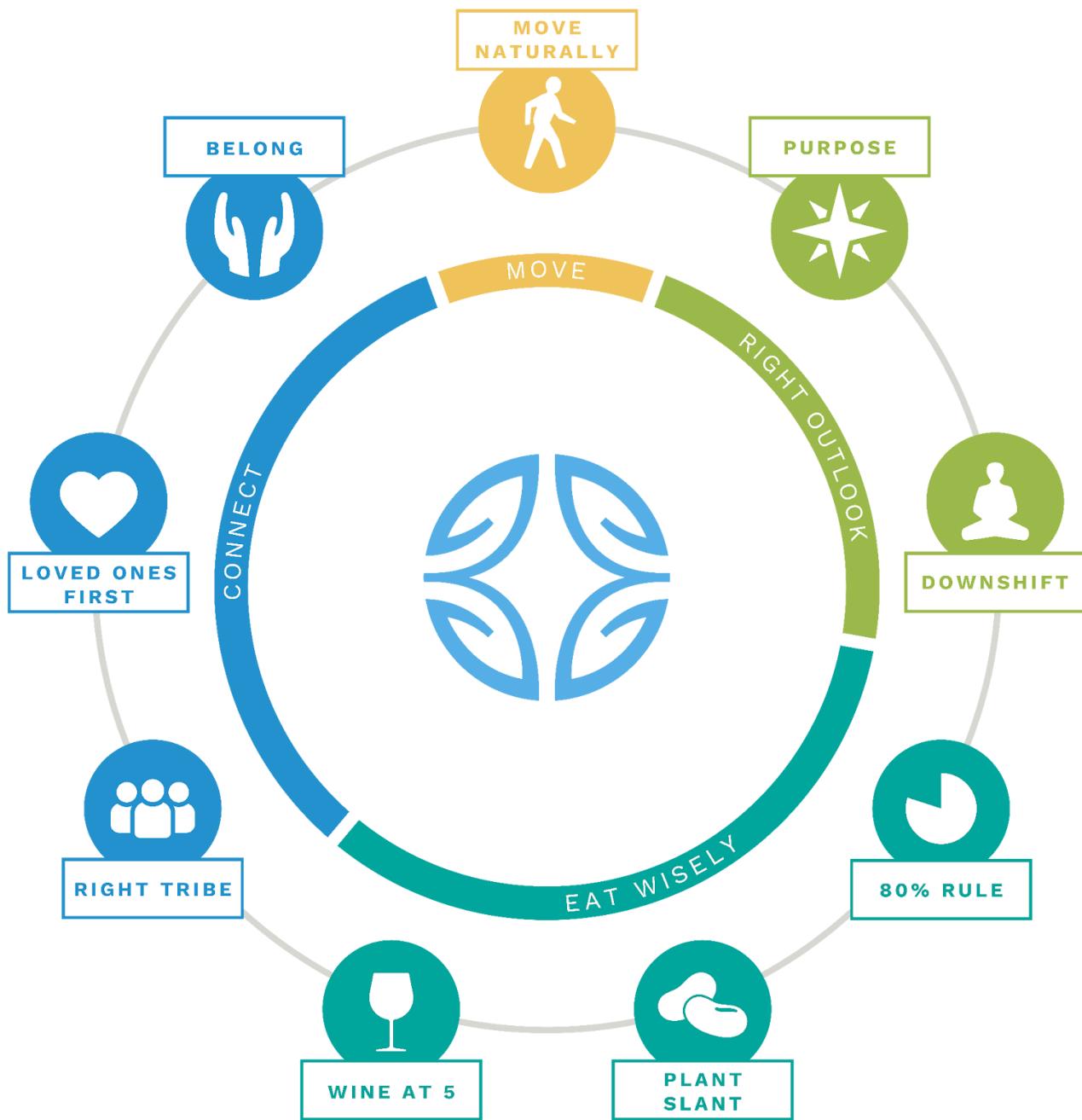
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The discovery of the blue zones naturally spurred widespread interest in why these regions display such remarkable population-wide longevity. Researchers have long assumed that genetics must contribute to some extent, but investigations on the heritability of lifespan have consistently indicated that the role of genetics is in fact quite small, accounting for only about 15-25% of the variability in lifespan across humanity.<sup>4,5</sup> Blue zones enthusiasts thus argue that since genetics have relatively little impact on lifespan, then other, more modifiable variables may underlie the longevity apparent in these regions. In other words, we may not be able to control our genetic makeup, but we do have considerable control over various aspects of our environment and lifestyle such as diet, physical activity, and social structures. Thus, if the long lives of their inhabitants are explained primarily by these *modifiable* factors, it’s possible that individuals outside of the blue zones might adopt these practices into their own lives and theoretically live longer as a result.

However, while modifiable factors certainly play a vital role in mitigating disease risk and extending longevity, we’d be remiss not to point out an important flaw in the argument described above by blue zones advocates. Though genes may play a relatively small part in determining lifespan within *typical* ranges, they appear to play a much *larger* role in determining the likelihood of survival to very advanced ages such as 100 and beyond.<sup>6,7</sup> Thus, the statement that environment and lifestyle contribute ~80% to the prevalence of centenarians in blue zones is an inaccurate extrapolation of data from twin studies on lifespan heritability. Still, even for centenarians, lifestyle still plays a role to some extent, and for those of us who haven’t been blessed with the genetics of long life, modifiable factors can go a long way in helping to overcome a lousy genetic hand. So regardless of the exact heritability of centenarian status, researchers have been drawn toward the blue zones to investigate the potential behaviors and environmental factors that might be partially responsible for the longevity of their inhabitants.

## Blue zone “secrets” to longevity

So what insights have come out of all of these investigations? In comparing the lifestyles of the five original blue zones, Buettner and his collaborators identified nine characteristics related to physical activity, diet, outlook, and social interactions that inhabitants of all five regions had in common, leading to a set of guidelines they have dubbed the “Power 9” (**Figure 2**). Below, we describe each of these guidelines according to the definitions and specific recommendations set forth by Dan Buettner and the Blue Zones organization.



**Figure 2:** The Power 9 are nine commonalities in lifestyle across the five original blue zones that were identified by Dan Buettner and his colleagues. From *Power 9: Reverse Engineering Longevity*.<sup>8</sup>

### 1. Move naturally

Buettner emphasizes that inhabitants of blue zones do not engage in dedicated exercise such as lifting weights or running. Rather, they “move naturally” – incorporating movement into their everyday lives by gardening, engaging in physical chores, and walking instead of driving to most destinations.

## 2. Purpose

Blue Zones guidelines state that having a sense of purpose in life can substantially extend lifespan, and they note that fostering such a motivation is a common cultural feature of the blue zones. Buettner suggests that personal relationships can provide such a sense of purpose and fulfillment, as can a career or learning a new skill.<sup>9</sup>

## 3. Downshift

Though people in every culture in every part of the world all experience psychological stress at varying degrees throughout life, Blue Zone guidelines note that a characteristic practice among blue zones inhabitants is to take time each day for stress relief. The specific approaches vary – ranging from prayer to happy hour to napping – but they are typically part of a *daily routine* rather than occasional reactions to specific periods of high stress.<sup>10</sup>

## 4. 80% rule

The term “80% rule” derives from an ancient Confucian mantra often recited in Okinawa – “hara hachi bu,” or “eat until you’re 80% full.”<sup>8</sup> However, this blue zone principle is intended to refer more broadly to any sustainable, lifestyle-based strategy for avoiding excess calorie consumption. For instance, Blue Zone guidelines also point to the practices of eating slowly and making dinner the smallest meal of the day.<sup>10</sup>

## 5. Plant slant

The vast majority of long-lived blue zones residents eat primarily plant-based diets. Guidelines specifically indicate that beans (e.g., fava, lentils, and soy) are a central part of centenarian diets and constitute a source of both fiber and protein. By contrast, meat is consumed very rarely (around five times per month).<sup>8</sup>

## 6. Wine at 5

Apart from the Loma Linda community, where residents abstain from alcohol in accordance with the tenets of their Adventist faith, alcohol consumption is a common feature of all of the original blue zones. In particular, Blue Zone guidelines recommend wine (and if possible, Sardinian Cannonau wine) as the drink of choice, stating that blue zone inhabitants typically consume around two (and sometimes up to four) glasses each day, usually in the early evening and/or at dinner.<sup>9,10</sup> (Of note, although guidelines describe this as “moderate” consumption, this level of intake in fact meets the threshold defined by the National Institute on Alcohol Abuse and Alcoholism as “heavy” – i.e.,  $\geq 8$  drinks per week for women and  $\geq 15$  drinks per week for men.<sup>11</sup>)

## 7. Belong

The “belong” guideline refers to involvement in a faith-based community. While the specific religious denomination does not appear to matter, Buettner notes that regular attendance at services related to religion and spirituality correlates with longer and happier lives.<sup>10,12</sup>

### 8. Loved ones first

Blue Zones guidelines point to the importance of placing a high priority on family, both for improving quality of life and for extending lifespan. Blue zones inhabitants tend to commit to a partner for life, and parents devote time to building close relationships with their children and grandchildren, who in turn care for aging parents and grandparents and keep them nearby or within their household.<sup>8</sup>

### 9. Right tribe

This guideline, which Buettner describes as “perhaps the most powerful thing you can do to change your lifestyle for the better,” concerns social connectedness and surrounding oneself with friends who reinforce healthy lifestyle choices.<sup>9</sup> The underlying concept is that those with whom you associate can influence your behaviors, such that healthy behaviors – or unhealthy behaviors – are “contagious.”<sup>10</sup>

The Power 9 have served as the basis for various “Blue Zones Projects” across the United States, in which government and community leaders at the local level have partnered with the Blue Zones organization to implement policies and infrastructure to promote adherence to the principles laid out above. For instance, walkways and community spaces are built to encourage physical activity and social interaction. These projects have since been used as evidence of the effectiveness of these nine guidelines in promoting health and longevity. Indeed, a nine-month pilot program in Albert Lea, Minnesota – the first “Blue Zone Project” town – was reported to result in an average projected lifespan extension of 2.9 years among residents (according to *projections* by the University of Minnesota School of Public Health based on variables such as smoking status and rates of hypertension) and a predicted reduction in annual healthcare costs of approximately \$8.6 million due to drops in smoking rates.<sup>13</sup>

## Concerns over data credibility

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The notion that the blue zones might serve as roadmaps toward longer and healthier lives has captured public attention and given rise to an entire industry revolving around the secrets of these regions. From cookbooks to meditation guides, “longevity food and beverages” to skin care lines, and branded apparel to a Netflix series, the wisdom of the blue zones has successfully been sold to consumers eager to adopt the Power 9 and reap benefits in their own lives.

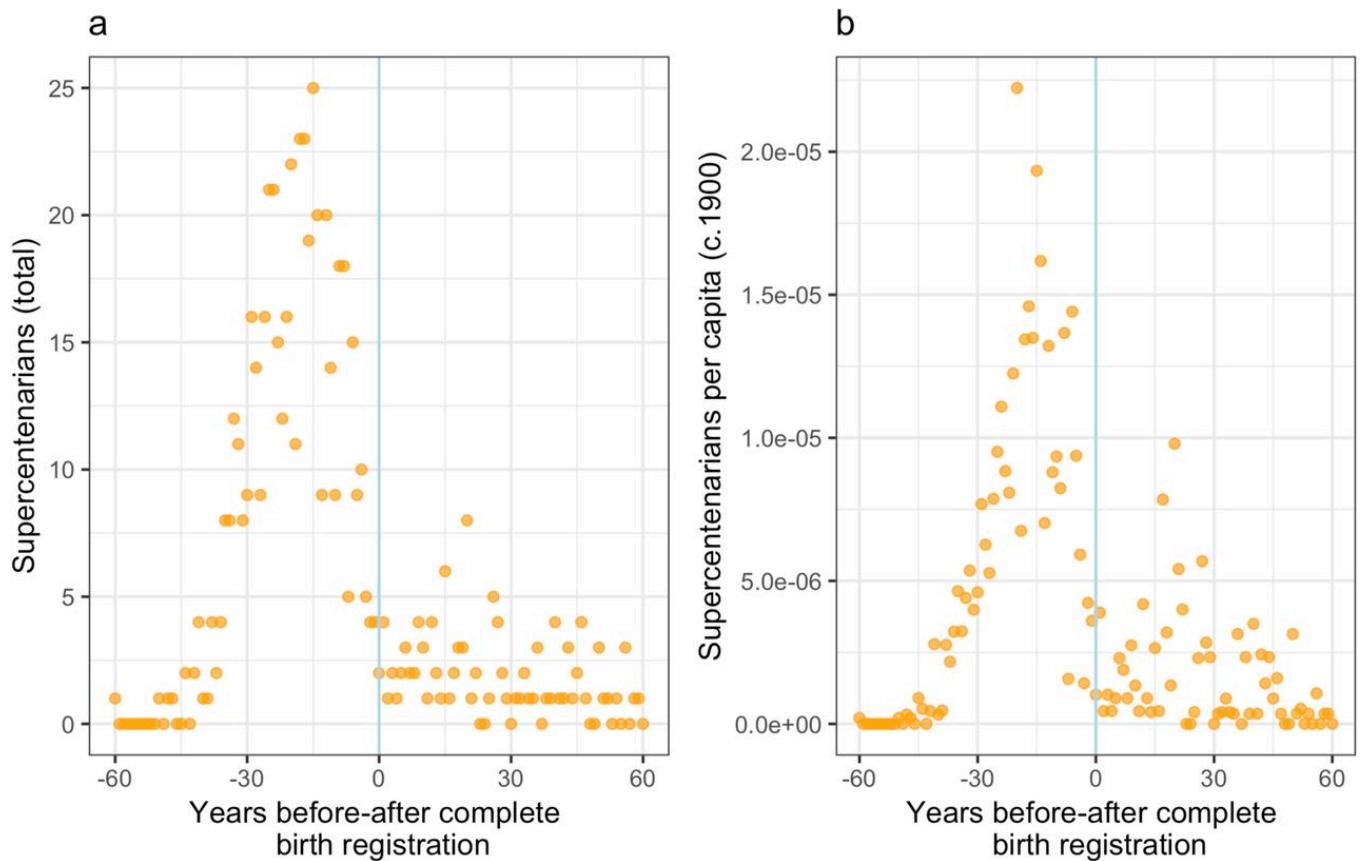
But recently, the entire premise upon which this industry is based has been called into question. Dr. Saul Newman, a researcher at the Oxford Institute of Population Ageing and University College London Centre for Longitudinal Studies, was awarded the Ig Nobel Prize (an award for discoveries that “makes people laugh, then think”<sup>14</sup>) in Demography in September of 2024 for his discovery that the alleged “exceptional longevity” of the blue zones may not even exist and is merely an illusion arising from faulty birth and death records.<sup>15</sup>

In addition to the “Power 9” principles listed previously, other commonalities among most blue zones are low income, low literacy, high crime, and *hallmarks of faulty recordkeeping*. In Newman’s words, each blue zone “displays patterns that suggest a dominant role of error, fraud, and (to phrase it generously) researcher degrees of freedom in explaining the distribution of extreme-age records.”<sup>16</sup> For instance, data from Okinawa revealed that although mortality rates for Okinawans under age 50 are *higher* than those in the rest of Japan, mortality rates for Okinawans over age 50 are significantly *lower* than the national average, a pattern that strongly hints at the impact of reporting errors or inaccurate birthdates among older age groups in this population. Further, Okinawans have the highest BMIs of all 47 Japanese prefectures and among the *lowest* per capita intake of seafood, root vegetables, and other “longevity-promoting” foods noted by Dan Buettner, casting doubts on how well the “Power 9” truly align with the lifestyles of blue zone residents.<sup>16</sup> (Blue Zones LLC has issued a response denying Newman’s claims, suggesting that younger generations have deviated from traditional Okinawan diets and lifestyle and are responsible for the discrepancies between the population-wide data and the habits reported by Buettner and colleagues.<sup>17</sup>)

As more direct (and damning) evidence that inaccurate records contribute to the evident longevity of blue zones inhabitants, Newman pointed to data from the last 15-20 years demonstrating that the majority of on-the-books “centenarians” in Greece and Japan (and nearly half of all centenarians in Costa Rica) were either the result of clerical errors, already dead, or never existed in the first place. Likewise, in Italy, a 1997 report indicated that 30,000 citizens at the time were collecting pensions while dead.<sup>18</sup> As Newman implies, rampant pension fraud and errors in birth and death records would be a logical explanation for the apparent paradox that the blue zones exhibit “exceptional longevity” yet also have significantly above-average poverty and unemployment rates (both typically associated with shorter lifespans) within their respective countries – countries which often feature generous pension systems. (Blue Zones LLC argues that they only studied living centenarians and supercentenarians for whom they had verified ages, though they do not dispute the point that many, if not most, individuals who fall into these age categories on paper may indeed be deceased or have inaccurate birth records.<sup>17</sup> Which is to say, they do not offer any argument against the idea that the entire concept of the “blue zones” might be based on faulty data – they might as well have chosen centenarians from any part of the world.)

And what about the United States? Data from 2019 revealed that 17% of American centenarians were also inaccurately designated as such due to clerical errors.<sup>19</sup> But perhaps the greatest illustration of the impact of faulty records comes from Newman’s data on the numbers and per-capita rates of supercentenarians (age 105 or above) before and after the United States enacted widespread birth certification around the start of the 20th century. The number of children born in the years before and after this change in recordkeeping who went on to become supercentenarians (on paper, at least) shows a sharp *decrease* coinciding with the introduction of birth registration, with total numbers falling by 80% and per-capita rates falling by 69% (**Figure 3**).<sup>16</sup> Over this same birth range, average life expectancy at birth *increased* substantially between earlier and later births. So how is it possible that those born prior to universal birth certification would be more than *three times* more likely to become supercentenarians as those born after universal birth certification? The only logical explanation

is that faulty records in the earlier cohorts *vastly* overinflated estimates of the numbers of supercentenarians in the US, demonstrating both that errors are quite common without strict oversight and that such errors can have an enormous influence on the apparent prevalence of extreme longevity in a given population.



**Figure 3:** Total numbers (a) and per capita rates (b) of becoming a supercentenarian (age 105 or above) across US states both prior to and after the introduction of state-wide birth certification. From Newman, 2019 [preprint].<sup>16</sup>

The frequency of documentation errors would not need to be very large to give rise to the appearance of pockets of exceptional longevity such as the blue zones. In any population – blue zone or otherwise – becoming a centenarian is an exceedingly rare event, which means that any single occurrence has a tremendous impact on overall statistics. And the smaller the difference between “typical” rates of achieving centenarian status and “exceptional” rates, the more likely it is that a small number of faulty records might account for it. Returning to the original data from Sardinia, the difference in numbers of centenarians per 100,000 residents between the Nuoro Province blue zone and the rest of Europe was *less than eight*, corresponding to a total of about 15 or 16 individuals. This number of errors is easily plausible given the unreliable recordkeeping of the late-19th and early-20th centuries.

## Correlation [still] isn't causation

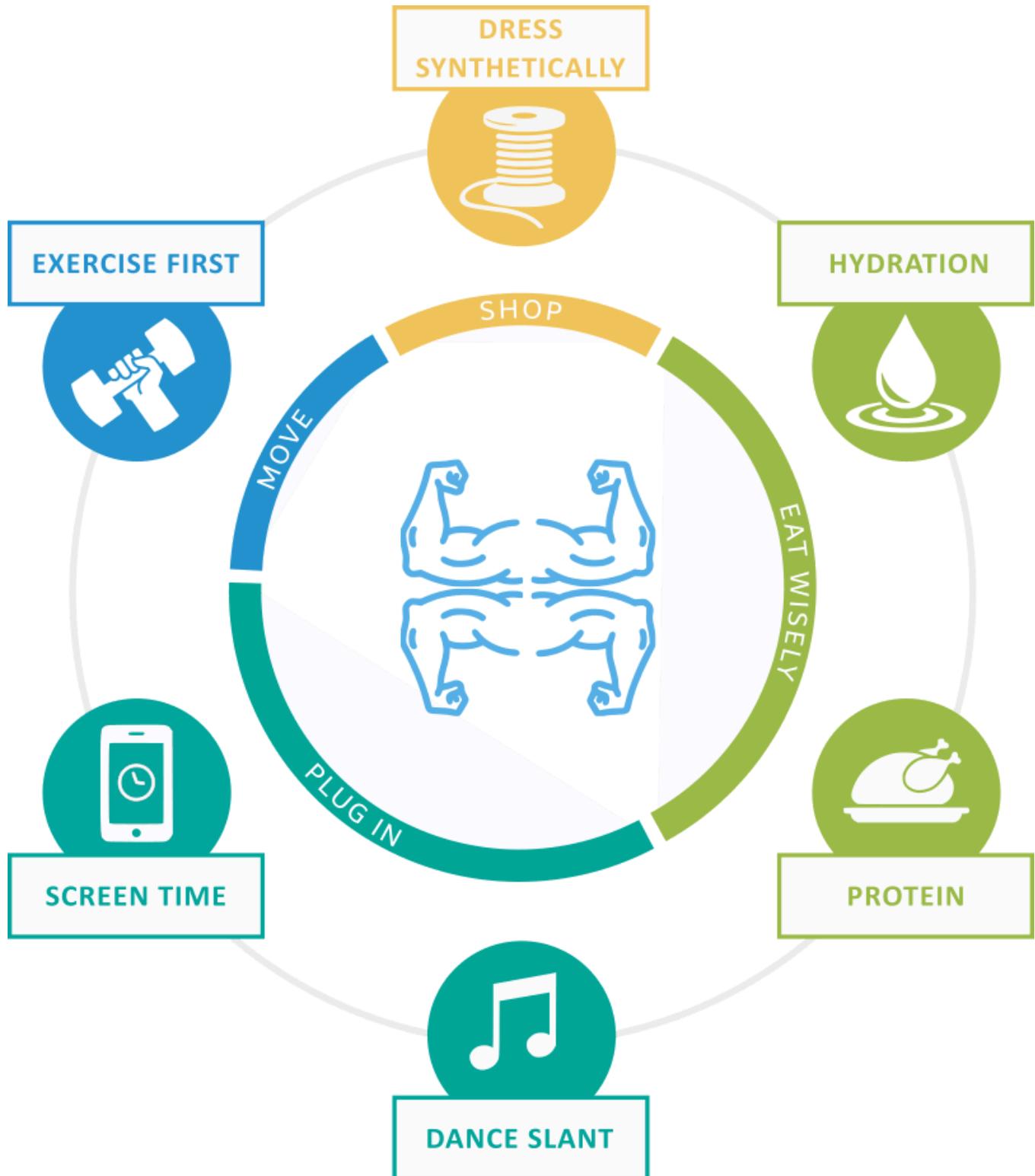
Even if we ignore the likelihood of faulty data and assume that populations within the blue zones genuinely live longer, healthier lives than populations in other areas of the world, there are still major flaws in the idea of examining these regions for lifestyle features and using this

information to derive a set guidelines meant to aid others in extending their own lifespans and healthspans. These flaws all stem from the same principle – one that is oft-repeated and yet oft-ignored – *correlation does not imply causation*.

The mere fact that a given set of lifestyle factors is common in a long-lived population – or even in *multiple* long-lived populations across different continents – does not mean that any or all of those factors are *causing* the long lifespans. Certain characteristics and behaviors may simply *correlate* with longevity (i.e., having no causal relationship) or be the *result* of long lifespans (i.e., reflecting reverse causality – for instance, being very advanced in age might make one more likely to turn to religion or spend more time with family). And yet, the utility of the Power 9 principles for individuals and populations outside of the blue zones relies entirely on the assumption that all nine represent *causal* factors toward enhancing health and longevity, such that non-blue-zones inhabitants might adopt any *one* of these practices and extend their lifespan as a result.<sup>20</sup>

Imagine conducting investigations of individuals inside fitness centers across various parts of the world to assess why they appear to have lower rates of obesity and heart disease than the general population. In determining which characteristics of fitness center inhabitants might contribute to their unusually good health, you might note certain commonalities across all of them. For instance, these people would likely all exhibit high levels of aerobic and/or resistance training activity, and perhaps high intake of protein and hydration solutions. You would also probably notice that wearing polyester spandex is common among individuals across all fitness centers, as is listening to electronic dance music with driving beats, and even engaging in high levels of screen time as people stream videos while using treadmills or stationary bikes.

Applying the same logic used for the Power 9, you might determine that all of these characteristics of gym denizens are contributing to their low rates of obesity and heart disease (**Figure 4**), but of course, this is not the case. Lounging around in spandex and watching YouTube will not improve cardiometabolic health.



**Figure 4:** The “Power 6.” Commonalities observed among inhabitants of fitness centers across various parts of the world suggest that these characteristics contribute to higher-than-average cardiometabolic health among these individuals... or not.

The example above highlights how correlative data in general can be misleading, but it also underscores an important principle that applies to observational and experimental research alike: no reliable conclusions can be drawn from the results of investigations that fail to isolate an individual variable for study. (Indeed, this principle constitutes much of the basis for the “correlation is not causation” maxim, as a critical flaw in the assumption of causal relationships from correlations is the possibility of influences from other variables.) The Power 9 represent

nine separate variables. The assumption implicit within blue zones dogma is that each of these nine variables are individually contributing positively and uniquely to longevity enhancement – i.e., that they have *additive* effects – when in actuality, some may have positive effects, others may have no effect, some may have effects through common (non-additive) mechanisms, and some may even have *negative* effects. In other words, by examining all variables together, we lose any clarity on the true effects of each.

For this reason, even the interventional evidence derived from Blue Zones Projects in Albert Lea and elsewhere offers little in the way of validation for the Power 9 principles on an individual basis. These projects suggest that efforts by local governments to facilitate greater adherence to blue zones principles may improve community health, but the effects might be due entirely to just one or two of the nine guidelines. (Indeed, because no control communities were monitored for comparison, it's possible that *none* of the Power 9 are responsible, and results instead arose from external influences such as national policy changes or from collective reaction to the prospect of being featured on a Netflix docuseries.) Further, the Blue Zones guidelines are not so esoteric that they are specific to the blue zones alone. Plenty of other areas in the world also adopt many or even all of the nine, so why don't these regions see similar numbers of residents achieving very advanced ages?

To truly evaluate the merit of the Power 9, we must turn to evidence for each of them *in isolation*. This task is challenging, as the Power 9 are vaguely defined and/or represent a combination of multiple variables (e.g., belonging to a faith-based group often goes hand-in-hand with having social support), but as much as possible, we will evaluate whether each is *independently* likely to enhance lifespan or healthspan.

## How do the nine guidelines stack up individually with other evidence?

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Let's start with the good news. For a handful of the Power 9, we have fairly good reason to believe the conclusions made by blue zones researchers regarding the positive effects of these practices on longevity. The 80% rule, for instance, can be regarded as a means of maintaining energy balance and avoiding excess fat accrual – and thus, avoiding the many well-documented health risks associated with obesity and metabolic syndrome (detailed in [AMA #53](#)). For some, adherence to the 80% rule may result in caloric restriction to a level *below* energy demands, which has been shown in numerous animal species to slow aging and extend lifespan.<sup>21</sup> In healthy humans, calorie restriction at a level of ~12-14% over two years has been shown to reduce chronic inflammation, improve metabolic health, and reduce cardiovascular risk factors – all of which may increase lifespan.<sup>22,23</sup>

Reducing stress (“downshift”) and maintaining social support networks (“right tribe” and “loved ones first”) are also likely to improve longevity and healthspan, though much harder to quantify. Although we lack reliable biomarkers of chronic psychological stress to facilitate *definitive* study of its effects on lifespan or specific disease states,<sup>24</sup> substantial evidence nevertheless indicates that such stress can have numerous detrimental effects on health through several physiological mechanisms.<sup>25</sup> For instance, stress reduces [sleep](#) quality, which in turn can lead

to declines in metabolic health, cognitive health, and further increase perceived stress. Chronic stress can also increase chronic [inflammation](#), which may accelerate cellular aging in addition to increasing risk of heart disease, cancer, metabolic syndrome, and other fatal conditions.<sup>26,27</sup>

Indeed, stress may in part mediate potential lifespan-reducing effects of a lack of social support, as social isolation and perceptions of loneliness correlate with psychological stress in humans and are used to *induce* psychological stress in rodent studies.<sup>28</sup> However, the mechanisms described by Blue Zones guidelines to link social support with longevity are also likely to play significant roles; healthy habits (and unhealthy habits) do tend to be reinforced by an individual's social circles,<sup>29</sup> and it certainly seems logical that close family ties increase the likelihood that younger generations will help to care for aging relatives – a logic that may underlie the observation that social support from family relationships is associated with lower mortality risk than support from friend relationships.<sup>30</sup>

For other guidelines, however, we have little or no compelling evidence that they might independently have any positive effect on lifespan or healthspan. Participation in faith-based communities ("belong") has indeed been shown fairly consistently to be associated with lower mortality rates over a given follow-up period than a lack of spiritual involvement, even after adjusting for various baseline health metrics.<sup>31,32</sup> However, according to one of the longest (28-year follow-up) and most comprehensive of these investigations, this benefit of religion appeared to stem from the fact that those in faith-based groups were significantly more likely to make changes toward a healthier lifestyle over the course of the follow-up period – for instance, by quitting smoking or increasing exercise.<sup>33</sup> Additionally, social integration and stress relief obtained through attendance at religious services is also likely to contribute to reduced mortality risk.<sup>34</sup> In other words, religious involvement itself is not responsible for the observed benefits to lifespan, which are instead attributable to other behaviors with well-established impacts on mortality risk.

We also have no reason to believe that frequent consumption of meat is detrimental to longevity or that plant-based diets are inherently superior to omnivorous diets with respect to health. Having discussed this point on numerous occasions in the past, we refer readers to more in-depth analyses such as [these newsletters](#) and this [premium article](#) and will limit ourselves here to a few key punchlines.

While *many* epidemiological studies have indicated that avoidance of meat consumption reduces risk of various chronic diseases and improves overall health and longevity,<sup>35–37</sup> these data are heavily confounded by the fact that vegetarians and vegans tend to be more health conscious in general, avoiding ultra-processed foods (vegan or not) and engaging in a number of health-promoting behaviors independent of diet patterns (e.g., regular exercise, prioritization of sleep). Plant-based foods are an important part of any diet, as they provide fiber and various key micronutrients, but inclusion of adequate intake of plant-based foods does not necessitate abandonment of meat.

Indeed, as Blue Zones guidelines acknowledge, dietary protein is critical for building and maintaining muscle mass, which in turn improves metabolic health and helps to maintain physical function as we age, and as we explained in a past premium article on [protein](#)

[recommendations](#), animal-based protein sources are higher quality in terms of bioavailability and ability to drive muscle protein synthesis than plant-based protein. Finally, in the specific case of the Blue Zones guideline, the data upon which this recommendation is based is especially questionable. The “plant slant” guideline is based on the observation that 95% of centenarians in the blue zones adhered to plant-based diets,<sup>10</sup> yet this phenomenon is highly likely to reflect a degree of reverse causality, as individuals of very advanced age typically have difficulty chewing and swallowing meats relative to softer protein sources such as beans. That is to say, being a vegetarian at age 100 isn’t what matters; there’s no indication that the centenarians on plant-based diets have been on those diets throughout the majority of their lives *leading up* to that advanced age, which would be necessary in order for this diet pattern to have any impact on their ability to attain centenarian status.

As for “purpose,” this guideline is too much of a vague catch-all to either validate or invalidate with regard to effects on health and longevity. It makes intuitive sense that people would generally be more likely to live a long and happy life if they feel they have a reason for living and getting up each morning. However, given the homogeneity in potential sources of a sense of purpose – most of which are independently beneficial for health, such as having close family ties or a mentally stimulating career – it is impossible to disentangle the *mindset* of fulfillment from the behavior or circumstances that are contributing to it.

## Some guidelines are potentially actively harmful

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As we’ve just seen, only a small subset of the Power 9 guidelines are supported by broader and more rigorous evidence. Yet even worse than unsupported guidelines are guidelines for which we have substantial evidence of *harm*.

Regardless of the “wine at 5” observation that inhabitants of the blue zones typically consume wine and other alcohol, no amount or type of alcohol is beneficial for longevity – a subject we covered in great depth in a previous [premium article](#). As we explain in that piece, epidemiological studies often report reduced mortality risk with low-to-moderate alcohol intake relative to complete abstinence, yet we can be fairly confident (in large part thanks to more robust Mendelian randomization data) that this association is reflective of a “healthy user bias” and health-promoting behaviors that covary with – but aren’t directly attributable to – mild alcohol intake. Further, we must keep in mind that the consumption prescribed in the Power 9 is in fact quite considerable, bordering on NIAAA definitions of “heavy drinking,” and as we covered in a [past newsletter](#), at this level of intake, every one-drink increase in daily consumption increases the odds of hypertension and coronary artery disease by 70% and 80%, respectively.<sup>38</sup>

Additionally, while the Blue Zones guidelines support the importance of physical activity in promoting health and extending lifespan, they explicitly differentiate between engaging in “natural” movement and intentionally devoting time to focused exercise. That is, rather than emphasizing that blue zone residents all engage in *some form* of physical activity (whether in day-to-day life or otherwise), the organization instead focuses on the absence of specific “gym time” in these populations. When emphasis is directed in this way, the implication is that dedicated workouts offer no benefit, rather than simply representing an *alternative means* of

accomplishing the same ends as “natural” movement. In other words, even though Blue Zones guidelines don’t suggest that dedicated exercise is detrimental, they nevertheless *actively discourage* this form of physical activity. Indeed, the Blue Zones website features quotes by Dan Buettner such as “diet and exercise do not work” and “exercise and fitness have us trying to solve the right problem but in the wrong way.”<sup>39</sup>

Incorporating movement into everyday life is certainly beneficial relative to no movement at all. For some, it may even represent a more sustainable way to increase physical activity than joining a gym or purchasing treadmills and weight machines. But in modern settings, incorporating sufficient volume and diversity of exercise into daily life activities isn’t possible for most individuals. Sure, taking a walk during a lunch break or gardening after work are low-intensity exercises and are more health-promoting than sitting and scrolling through social media for an hour – but they won’t substantially help you to build strength or increase your VO<sub>2</sub> max. Perhaps the lifestyles of goat herders and fishermen in quaint medieval villages might hit all of the above, but that idyllic picture of a bygone era simply doesn’t translate for the vast majority of us living in developed nations, who are so often tied to a desk all day and spend each morning and evening locked in traffic over a 20-mile commute. The realities of modern life necessitate focused efforts to get the most out of the limited time and resources that we have available for exercise, and discouraging such focused efforts is likely to lead many to *reduce* their overall physical activity, rather than to increase it in a more “natural” way (and honestly, is hauling fertilizer really that much more “natural” than lifting a dumbbell?).

## Not-so-secret “secrets”

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But what about those few guidelines for which other evidence *does* suggest potentially positive effects on longevity? Do these pearls of wisdom justify all of the interest and excitement about blue zones, even if the rest of the guidelines are duds? Perhaps – if the audience is a group of toddlers. But for the rest of us, these few useful principles are simply common knowledge and largely intuitive, despite being marketed as “secrets.”

Does it come as a surprise to anyone that avoidance of overeating and regular efforts to reduce stress are likely to improve health trajectories? Isn’t it a little intuitive that having close family increases the likelihood that you’ll have someone watching out for you in your old age? Or that friends influence your health choices – for better or worse? (How many parents have ever worried about their kids “getting involved with the wrong crowd”?) These aren’t secrets – they’re no-brainer basics for a happy and healthy life. For that matter, I’d bet that anyone reading this could come up with many *more* basics that the Blue Zones guidelines have omitted, like getting enough sleep or having regular health checkups (and yes, getting exercise – in a gym or otherwise).

So in summary, the entirety of work related to the blue zones has added nothing to our collective body of knowledge about how to live longer and healthier lives. At worst, it offers dangerous messages promoting excessive alcohol consumption and discouraging dedicated exercise, and at best, it’s a lesson on faulty recordkeeping and the difference between correlation and causation. But perhaps most likely of all, it’s just fancy branding on generic advice that most of us have heard (for free) since childhood.

For a list of all previous weekly emails, click [here](#).

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