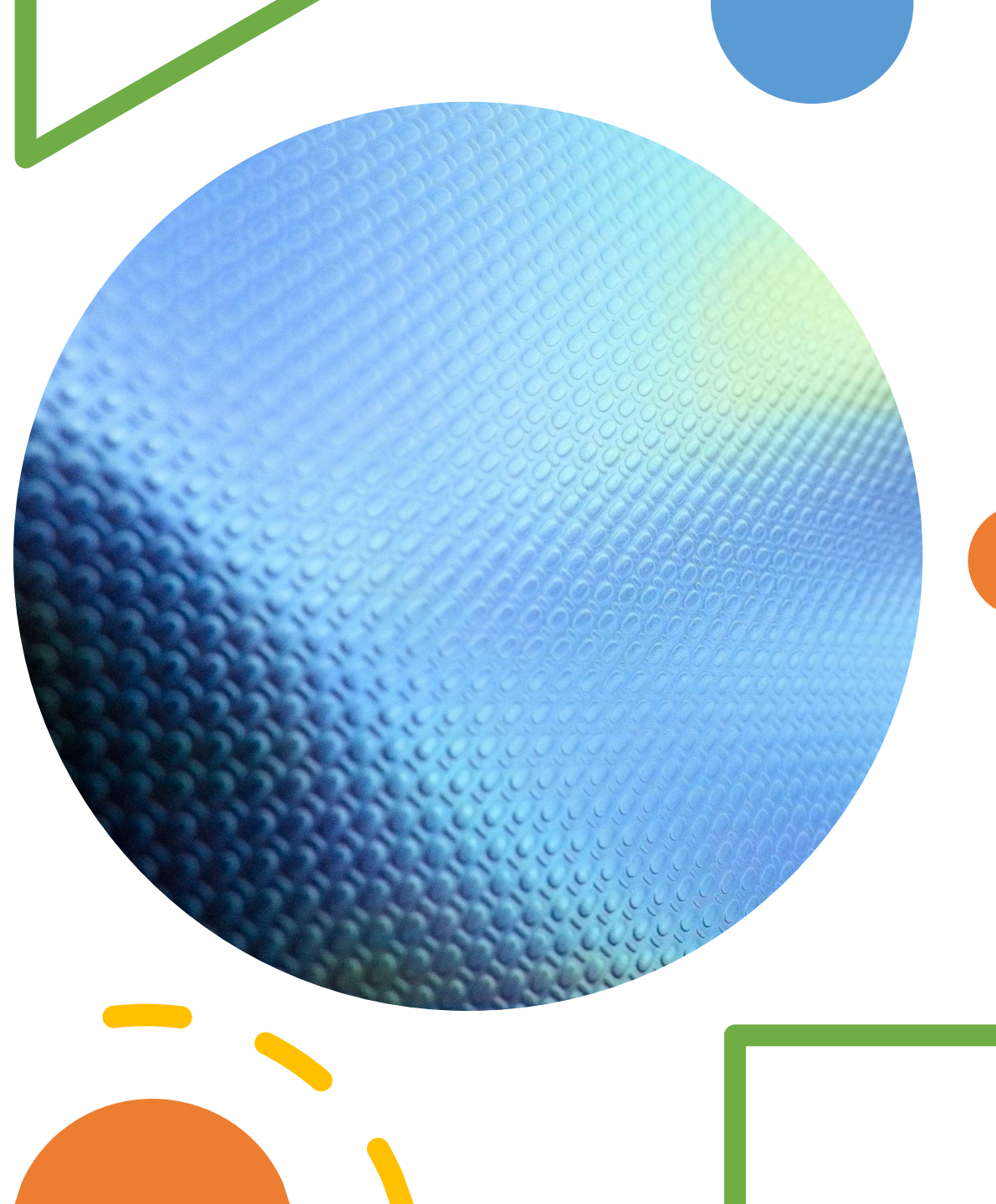


BLUE ZONES

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Financial disclosures

Nothing to disclose

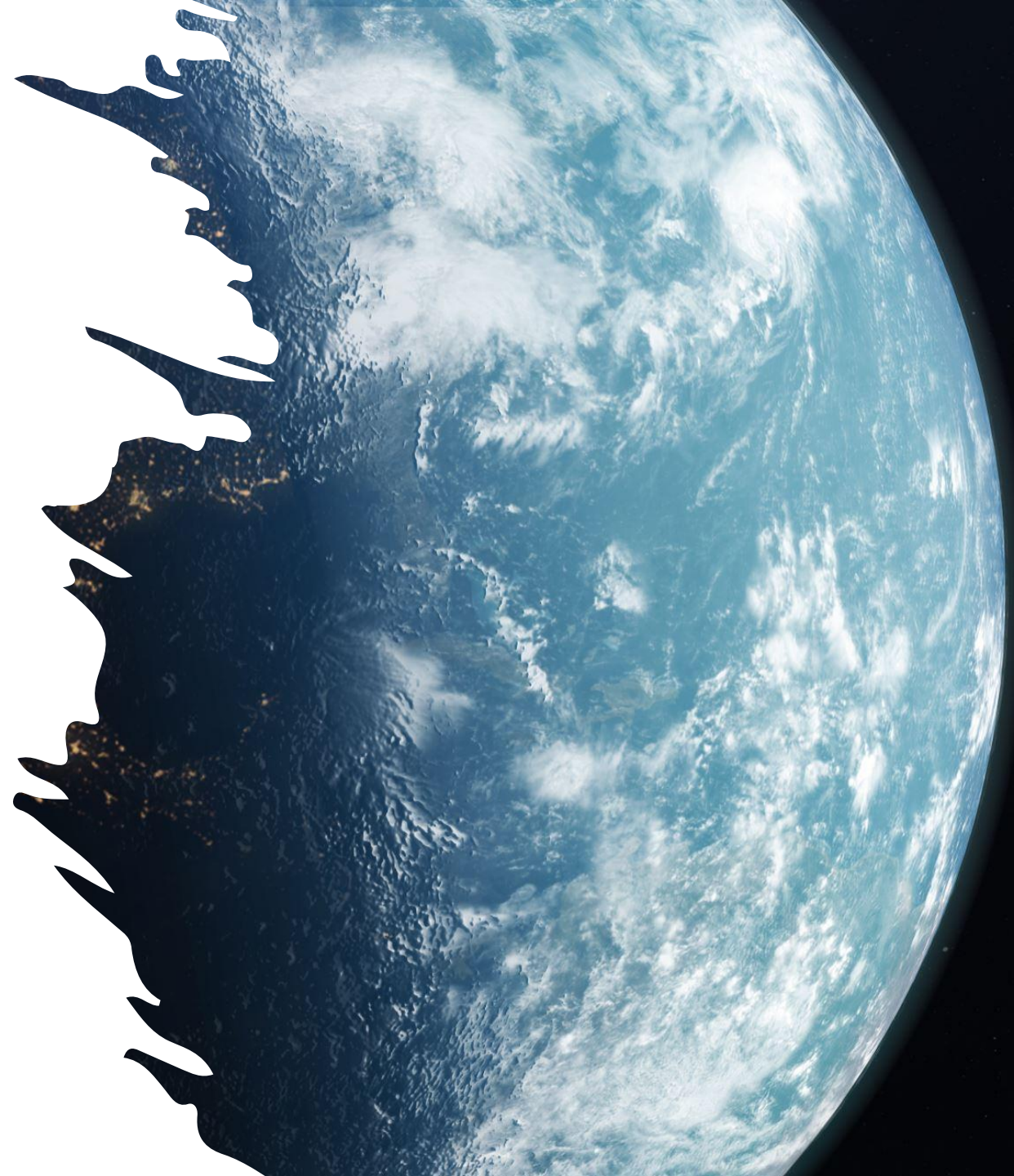


Objectives

- To learn about blue zones
 - To understand the reasons behind the longevity of people who live in these blue zones
 - To discuss ways that we can incorporate these findings in our lives
- 

What is a Blue Zone

- “Blue Zone” is a non-scientific term given to **geographic regions that are home to some of the world’s oldest people**. It was first used by the author [Dan Buettner](#), who was studying areas of the world in which people live exceptionally long lives with low rates of chronic diseases.



Longevity

- The Danish Twin Study established that only about 20% of how long the average person lives is dictated by our genes, whereas the other 80% is dictated by our lifestyle.
- Average American lifespan- 79 years
(Males 77 years- Female 81 years)

A world map with a dark blue background. The landmasses are shown in a light green and brown color scheme. Five locations are marked with blue circles and labeled with white text. The labels are: 'Lomo Linda, CALIFORNIA' in the western United States; 'Nicoya, COSTA RICA' in central Costa Rica; 'Sardinia, ITALY' in the Mediterranean Sea; 'Ikaria, GREECE' in the Aegean Sea; and 'Okinawa, JAPAN' in the western Pacific Ocean.

**Lomo Linda,
CALIFORNIA**

**Sardinia,
ITALY**

**Okinawa,
JAPAN**

**Nicoya,
COSTA RICA**

**Ikaria,
GREECE**

Blue zones across the world

Sardinia, Italy (home to the world's longest living men)

- A cluster of villages in a kidney-shaped region on this island make up the first Blue Zone region we ever identified. In 2004, a research team set off to investigate a rare genetic quirk carried by its inhabitants. The M26 marker is linked to exceptional longevity and due to geographic isolation, the genes have mostly remained undiluted. The result: nearly 10 times more centenarians per capita than the U.S.
- They have kept to a very traditional, healthy way of life. They hunt, fish and harvest the food they eat and spend a lot of time together.

Sardinian Living

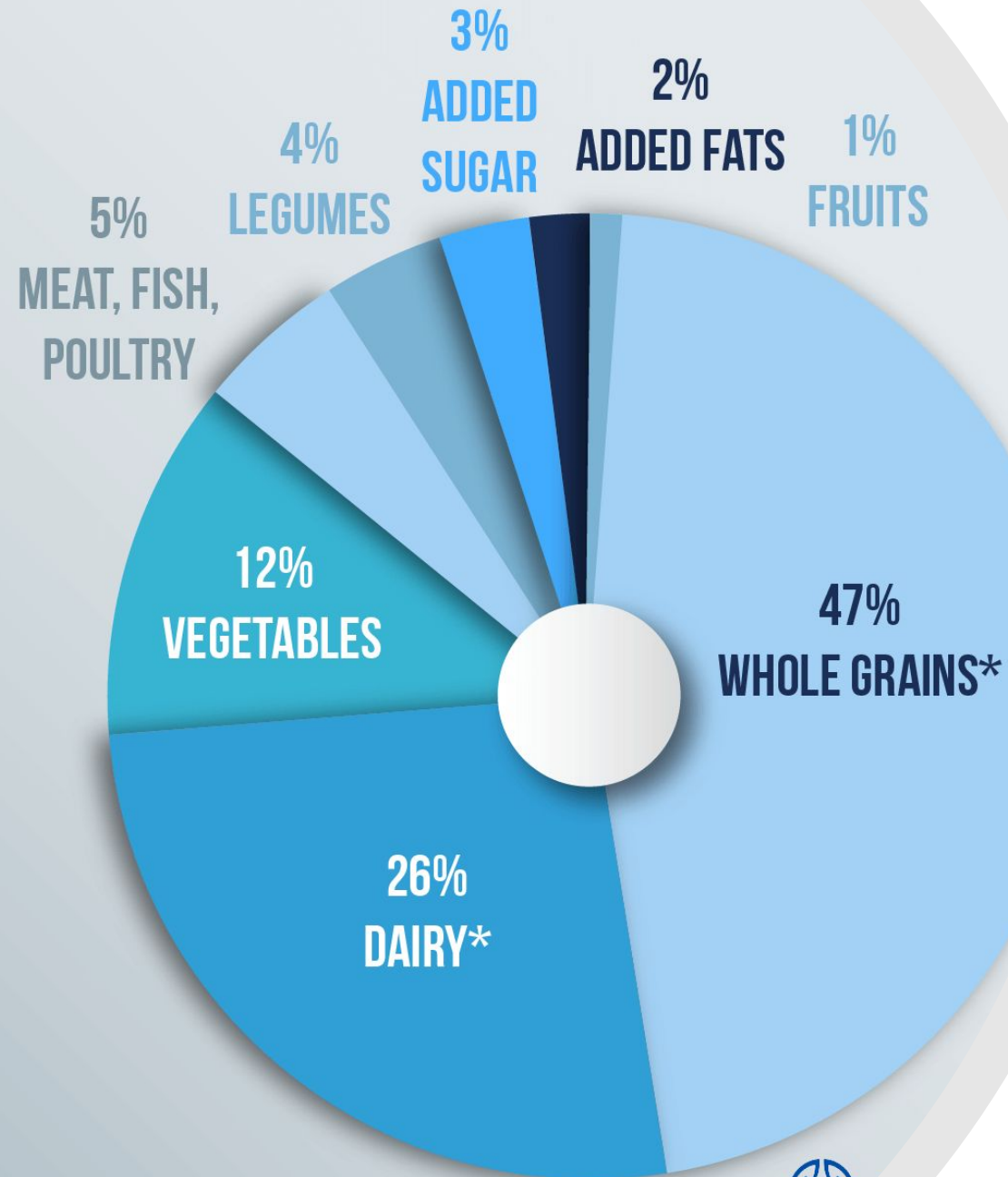
- Lean plant based diet accented with meat
- Family first
- Celebrate elders
- Take a walk
- Drink wine (Cannonau wine has 2 or 3 times the level of artery-scrubbing flavonoids as other wines.)
- Laugh with friends
- Drink Goat's milk



- Sheep and goat's milk
- Barley is main grain


SARDINIA, ITALY

HOW SARDINIAN CENTENARIANS
ATE FOR MOST OF THEIR LIVES







* SHEEP AND GOAT'S MILK
* WHOLE GRAINS: BARLEY





Okinawa, Japan (world's longest living women)

- The islands at the southern end of Japan have historically been known for longevity, once called the **land of immortals**. Okinawans have less cancer, heart disease and dementia than Americans, and women there live longer than any women on the planet.
 - Perhaps their greatest secret is a strong dedication to friends and family. They maintain a powerful social network called a “moai,” a lifelong circle of friends that supports people well into old age. Okinawans also have a strong sense of purpose in life, a driving force that the Japanese call “ikigai.”
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Okinawa Living

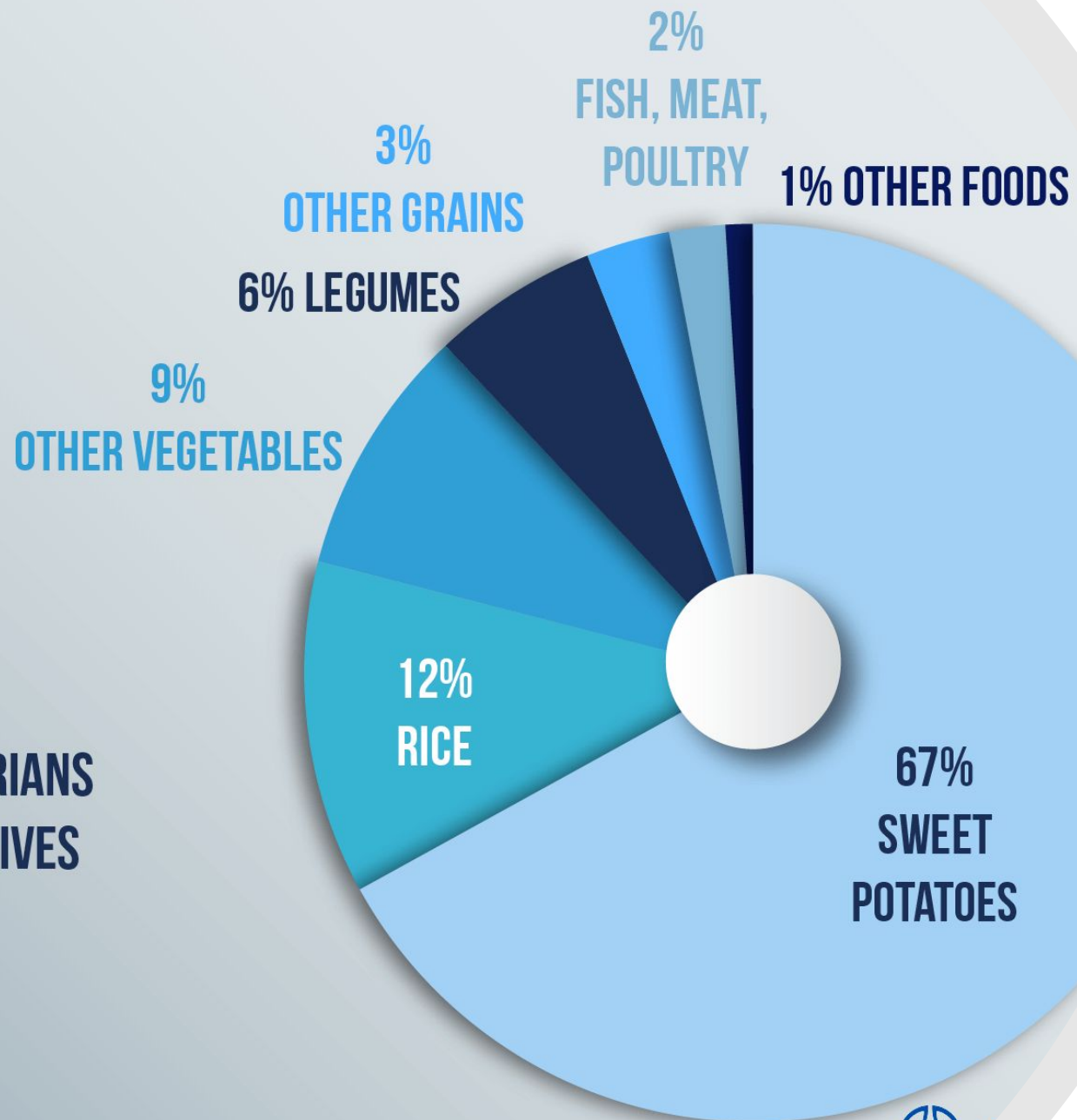
- Ikigai (purpose in life)
- Plant based diet (stop when 80% full)
- Gardening, medical garden
- Moi (social network)
- Sunshine
- Stay active
- Hardship tempered attitude



Japanese sweet potato, imo, low glycemic index, high in fiber, lots of vitamins (A, B, C, E folate) and high in potassium. High in antioxidants.

OKINAWA, JAPAN

HOW OKINAWAN CENTENARIANS
EAT FOR MOST OF THEIR LIVES



Ikaria, Greece

- Ikarians live 8 years longer than Americans do.
- 20% less cancer and 50% less heart disease.
- Almost no dementia.

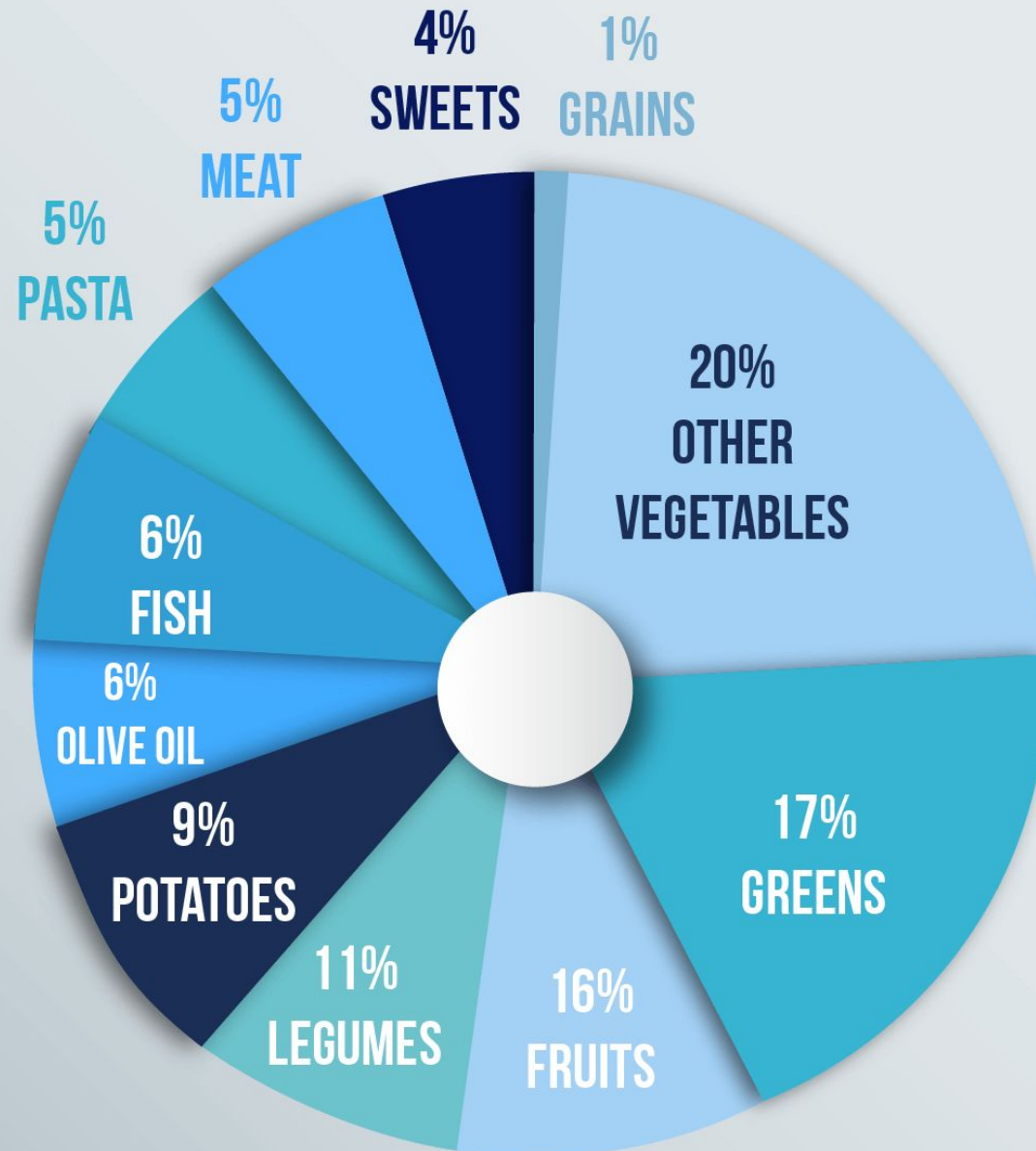
Ikarian living

- Mimic mountain living
- Eat Mediterranean style diet
- Lots of herbs in diet
- Naps (lower the stress hormones)
- Fasting
- Make family and friends priority
- Choose goat's milk over cow's milk



IKARIA, GREECE

HOW IKARIAN CENTENARIANS
ATE FOR MOST OF THEIR LIVES

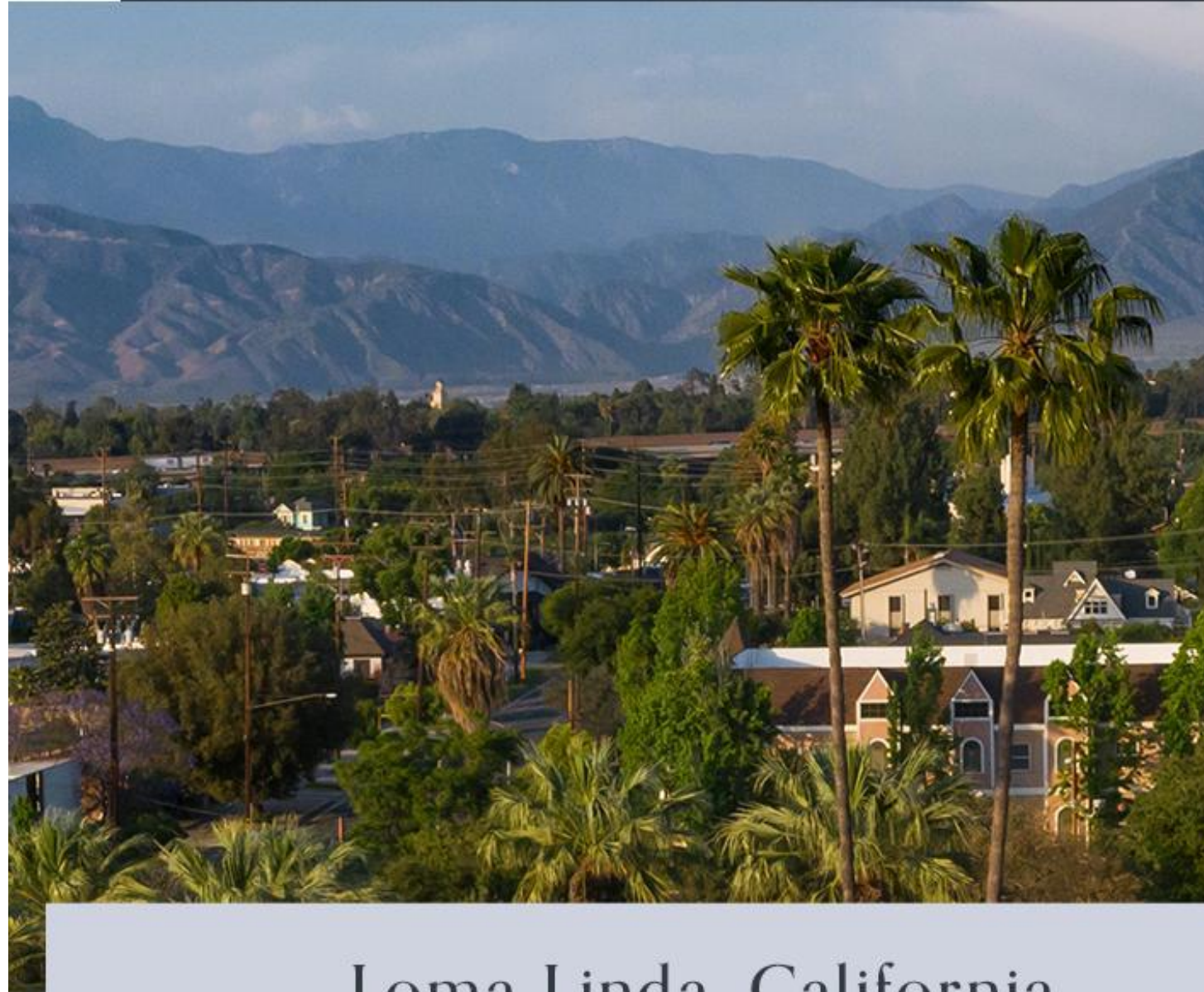


Loma Linda, California

- A community of about 9,000 Seventh Day Adventists in the Loma Linda area are the core of America's blue zone region.
- They live as much as a decade longer than the rest of Americans.

Loma Linda Bluezone living

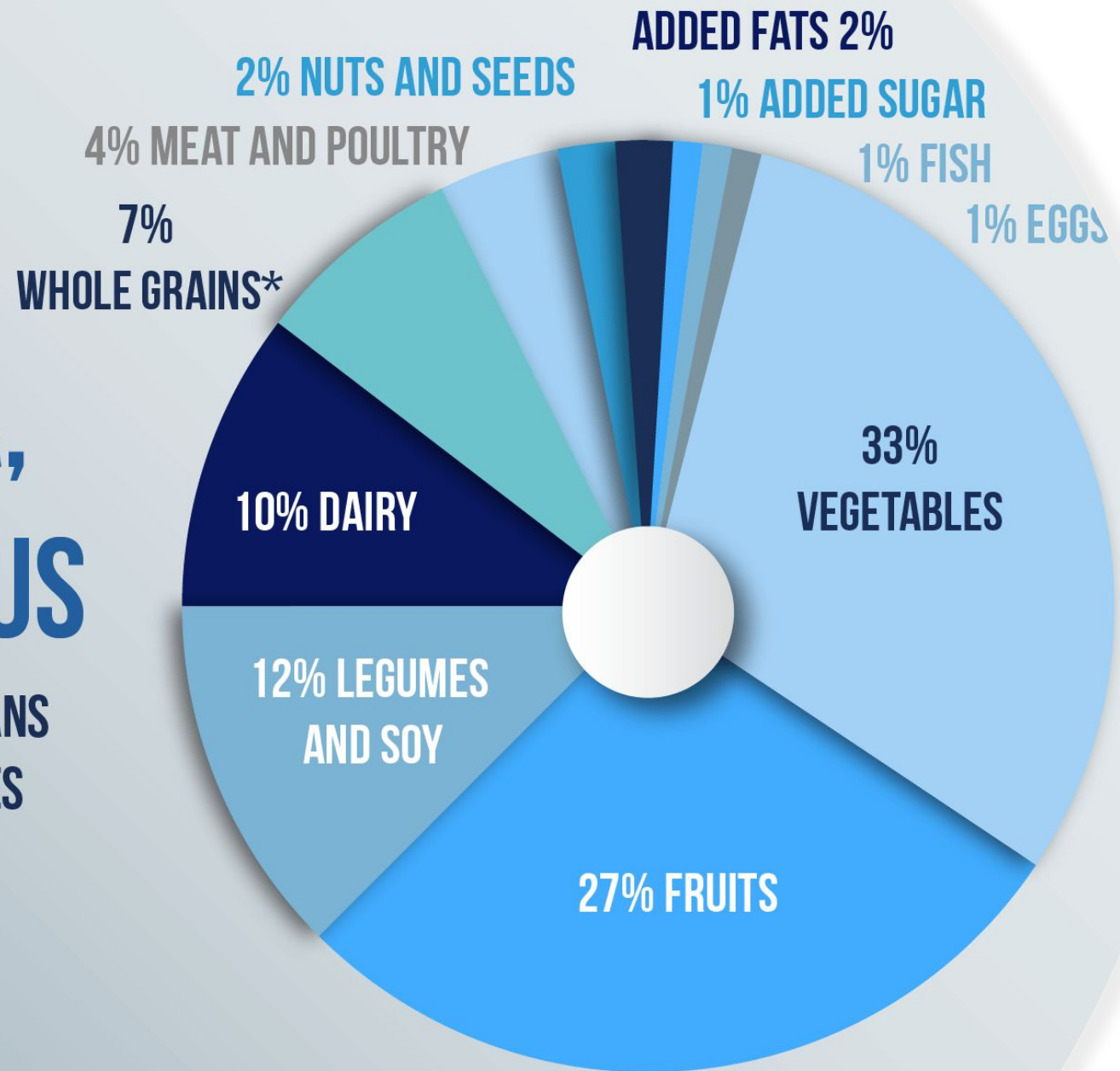
- Find a sanctuary in time (Sabbath)
- Healthy BMI
- Regular moderate exercise
- Spend time with like minded friends
- Snack on nuts
- Give back- volunteer
- Meat in moderation
- Early and light dinner
- More plants in diet and lots of water



Loma Linda, California

LOMA LINDA, CALIFORNIA, US

HOW LOMA LINDA CENTENARIANS
ATE FOR MOST OF THEIR LIVES



SOURCE OF GRAINS: OATS

Nicoya, Costa Rica

- The Caribbean nation is economically secure and has excellent health care but spend just 15% of what America spends on healthcare.
- Nicoyans are more than twice as likely than Americans to reach a healthy age of 90
- Faith, family and “*plan de vida*,” or reason to live, which propels a positive outlook among elders and helps keep them active. Nicoyan centenarians frequently visit with neighbors, and they tend to live with families and children or grandchildren who provide support, as well as a sense of purpose.

Nicoyan Living

- Plan de vida
- Drink hard water (rich in calcium)
- Keep a focus on family
- Eat light dinner
- Maintain social networks
- Keep hard at work
- Get sun
- Embrace a common history

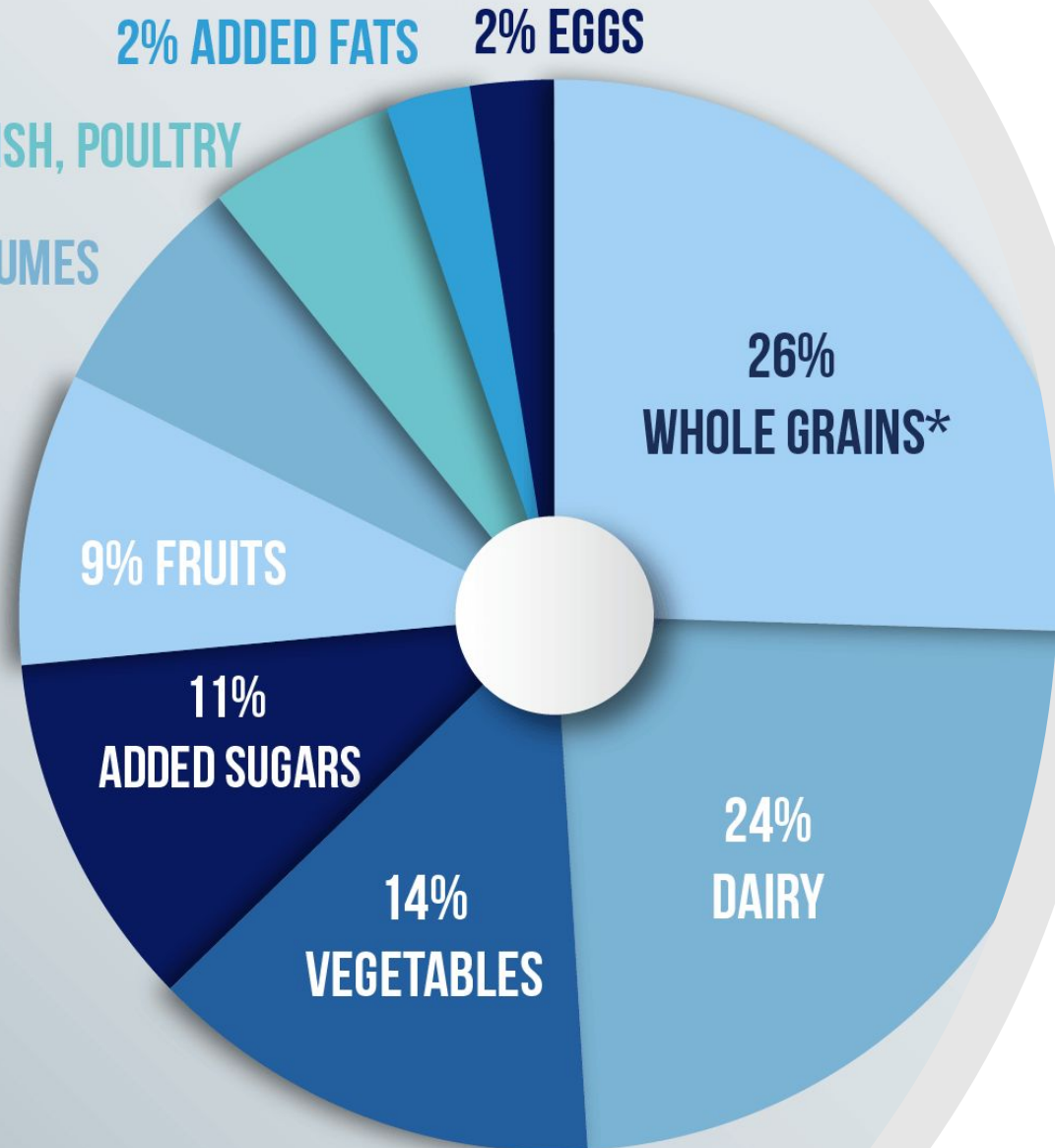


Main grain: Corn

NICOYA PENINSULA, COSTA RICA

HOW NICOYAN CENTENARIANS
ATE FOR MOST OF THEIR LIVES

SOURCE OF GRAINS: CORN



6th Blue Zone- **Singapore**

- Engineered blue zone
- Average life expectancy 83 years
- Pedestrian focused signage, tax on cars/ gas, robust subway system
- Healthy food is subsidized, less sugar in beverages, nutrition labels
- Healthcare- focus on prevention, incentives for logging 10k steps/day
- Intergenerational gatherings- tax break if parents live with/close.
Other projects to connect seniors to nature and other generations.



COMMON THEME?

The Power 9

MOVE NATURALLY – (adherence to gym memberships- after just 2 years, the number of attendees drop by 70%).



PURPOSE- (why do you wake up in the morning !)



DOWNSHIFT – (naps, pray, breaks etc).

The Power 9

80% RULE. (also eat smallest meal in later afternoons)

PLANT SLANT- eat beans . (meat only a few times/month)

WINE in moderation- (except the Adventists)- (the trick is to drink 1 to 2 glasses per day (preferably Sardinian Cannonau wine), with friends and/or with food.

The Power 9

BELONG. (Research shows that attending faith-based services 4 times per month will add 4 to 14 years of life expectancy).

LOVED ONES FIRST. (keep parents/ grandparents close, commit to a partner).

RIGHT TRIBE. (social circles that support healthy behaviors).

Blue Zone Life: Four Always; Four to avoid

- 100% whole grains: bulgar, farro, quinoa, brown rice, oatmeal, whole cornmeal.
- A handful of nuts/seeds a day
- A cup of beans/legumes per day
- 5-10 servings of fruits & vegetables a day
- Sugar sweetened beverages
- Salty snacks
- Packaged sweet- candies/ cookies etc
- Processed meats- linked to cancer and heart disease



LIFE RADIUS

- Research shows that individuals spend about 90% of their lives within 5 miles of their home, known as the Life Radius.

Individual factors

- Home (put a fruit bowl on counter, serve food at the stove instead of table, not using machines for work around the house etc).
- Social networks
- Volunteer



Places

- Work place (standing desks, eliminating vending machines)
- Schools (no meat days, removal of vending machines)
- Stores (making fruits/ vegetables center of attention)
- Restaurants (no breadsticks)



POLICY

- Making fast food places less evident/ available. (If there are 6 or more fast food restaurants within half a mile of an individual's home, they are 40 % more likely to be obese than if there are less than 3)
- Putting regulations on smoking
- Walkable and bikeable pathways
- Clean parks




American Cities- Blue Zones

- In 2008, Dan and the Blue Zones team finalized the blue print for Life Radius. They had to make sure that it could be applied to an American city.
- Alberta Lea, MN was picked as pilot.
 - Population: 9000
 - Walkable pathway was created, sidewalks were connected
 - Worked with Grocery stores/ restaurants/ schools to make changes.

A large orange circle is positioned on the left side of the slide, partially cut off by the edge.

Alberta Lea, MN

- 25% of the community signed a personal pledge that they would take steps toward a healthy lifestyle.
 - After about a year and a half, there was a 3.2-year bump in life expectancy; the community lost a combined weight of 7280 pounds; and health care costs dropped by 40%.
- 
- A yellow dashed line is located in the bottom right corner of the slide, consisting of several short, curved segments.

A decorative graphic in the top-left corner featuring a blue circle, a yellow circle, and a green line forming a corner. Another green line forms a corner in the bottom-left, and a yellow dashed line is near an orange circle in the bottom-center.

Blue zones expansion

- Now in several other communities across USA in Ohio, Iowa, North Carolina, California etc.
- Resulted in reduced smoking, lower BMI, reduced healthcare cost, less disease burden, less stress.

References:

- Bluezones.com
- Nia.nih.gov
- [Blue Zones - PMC \(nih.gov\)](#)
- Herskind AM, McGue M, Holm NV, Sorensen TIA, Harvold B, Vaupel JW. The heritability of human longevity: a population-based study of 2,872 Danish twin pairs born 1870-1900. *Hum Genet.* 1996;96:319-323.