



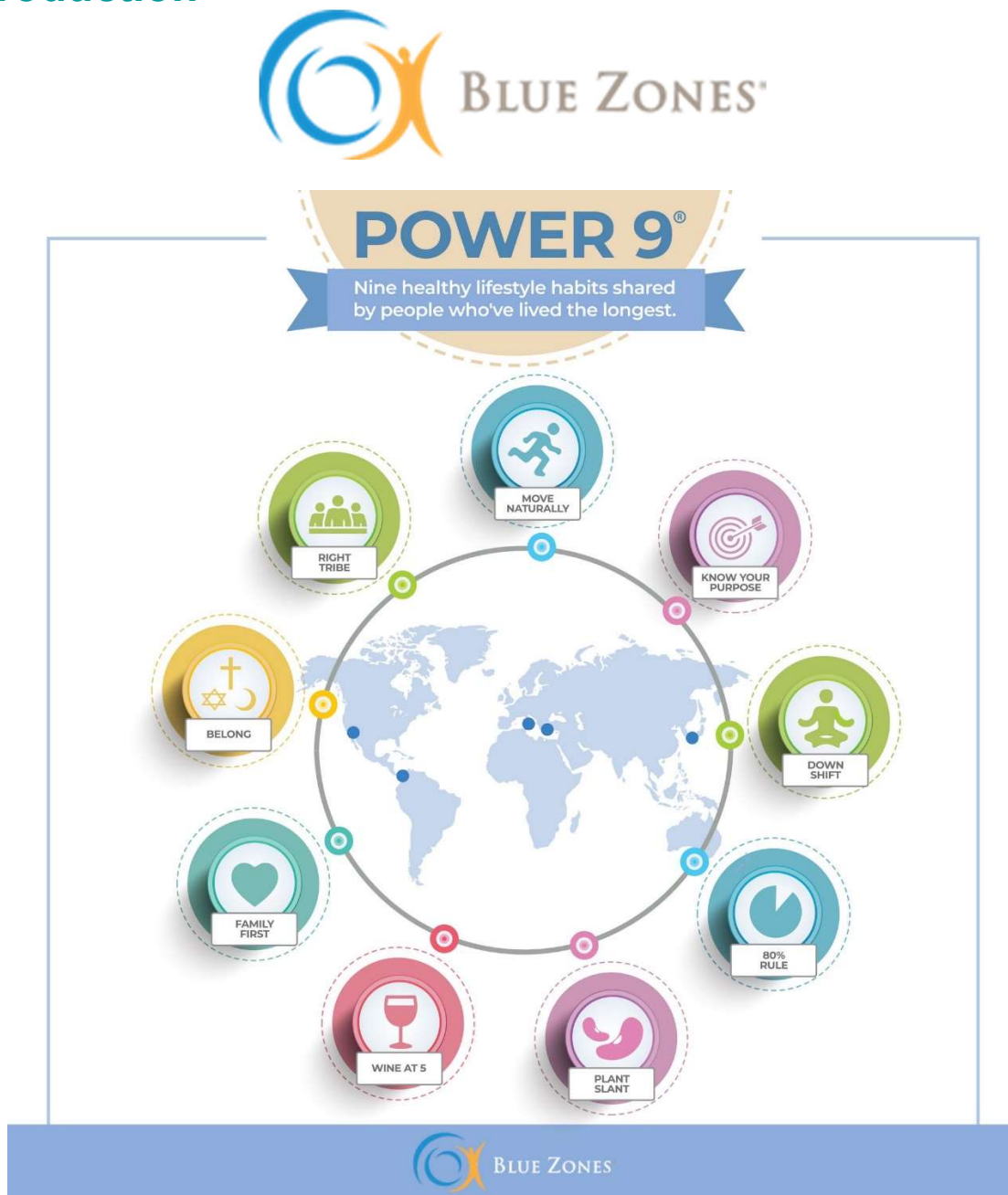
**KEYS TO
LONGEVITY:
BLUE ZONES
AND OTHER
RESOURCES
COMPENDIUM**

2018

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Introduction



Source for this graphic and the short descriptions of the Power 9: <https://www.bluezones.com/2016/11/power-9/>

Website: <https://www.bluezones.com/>

Also see short video “Blue Zones Project Overview” (3:45 min.)
<https://www.youtube.com/watch?v=FEYVqM-8DHE>

Power 9: Move Naturally

“The world’s longest-lived people don’t pump iron, run marathons or join gyms. Instead, they live in environments that constantly nudge them into moving without thinking about it. They grow gardens and don’t have mechanical conveniences for house and yard work.”

American College of Sports Medicine, Chodzko-Zajko W.J. & Proctor D.N. (2009). American College of Sports Medicine position stand. Exercise and physical activity for older adults. *Medicine & Science in Sports & Exercise*, 41(7), 1510–30. <https://www.ncbi.nlm.nih.gov/pubmed/19516148>

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EurekaAlert! (2013). DIY and gardening can cut heart attack/stroke risk by 30 percent and prolong life in 60+ age group. *British Medical Journal of Sports Medicine*. https://www.eurekaalert.org/pub_releases/2013-10/bmj-dag102413.php

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National Institute on Aging. (2018). *Real-life benefits of exercise and physical activity*. <https://go4life.nia.nih.gov/sites/default/files/RealLifeBenefitsOfExerciseAndPhysicalActivity.pdf>

Reynolds, G. (2018, March 28). Those 2-minute walk breaks? They add up. *New York Times*. https://www.nytimes.com/2018/03/28/well/move/walking-exercise-minutes-death-longevity.html?em_pos=small&emc=edit_up_20180328&nl=upshot&nl_art=5&nlid=78281921emc&ref=healthline&te=1

Refers to this original article:

Saint-Maurice, P. F., Troiano, R. P., Matthews, C. E., & Kraus, W. E. (2018). Moderate-to-vigorous physical activity and all-cause mortality: Do bouts matter? *Journal of the American Heart Association*, 7(6), online. <http://jaha.ahajournals.org/content/7/6/e007678>

Rogerson, M. C., Le Grande, M. R., Dunstan, D. W., et al. (2016). Television viewing time and 13-year mortality in adults with cardiovascular disease: Data from the Australian Diabetes, Obesity and Lifestyle study. *Heart, Lung and Circulation*, 25, 829–836. [http://www.heartlungcirc.org/article/S1443-9506\(16\)30049-X/pdf](http://www.heartlungcirc.org/article/S1443-9506(16)30049-X/pdf)

Whaley, D. E., & Ebbeck, V. (1997). Older adults' constraints to participation in structured exercise classes. *Journal Of Aging & Physical Activity*, 5(3), 190. Abstract <https://journals.humankinetics.com/doi/abs/10.1123/japa.5.3.190>

Power 9: Know Your Purpose

“The Okinawans call it “Ikigai” and the Nicoyans call it “plan de vida;” for both it translates to “why I wake up in the morning.” Knowing your sense of purpose is worth up to seven years of extra life expectancy.”

Hill, P. L., & Turiano, N. A. (2014). Purpose in life as a predictor of mortality across adulthood. *Psychological Science* 25(7), 1482-1486. doi:10.1177/0956797614531799 <http://journals.sagepub.com/doi/pdf/10.1177/0956797614531799>

Kim, E. S., Kawachi, I., Chen, Y., et al. (2017). Association between purpose in life and objective measures of physical function in older adults. *JAMA Psychiatry*, 74(10), 1039-1045. <https://jamanetwork.com/journals/jamapsychiatry/article-abstract/2648692?redirect=true>

LaBier, D. (2017, Feb. 7). Why enjoying life with a meaningful purpose affects your longevity. *Huffington Post*. https://www.huffingtonpost.com/entry/why-enjoying-life-with-a-meaningful-purpose-affects_us_589790e7e4b0985224db56bf

Tomioka, K., Kurumatani, N., & Hosoi, H. (2016). Relationship of having hobbies and a purpose in life with mortality, activities of daily living, and instrumental activities of daily living among community-dwelling elderly adults. *Journal of Epidemiology*, 26(7), 361-370. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4919481/>

Weiss, L. (2017, June 20). Four steps to leveraging mundane moments to find purpose. *Psychology Today* online. <https://www.psychologytoday.com/us/blog/the-whole-hearted-path/201706/four-steps-leveraging-mundane-moments-find-purpose>

Power 9: Down Shift

“Even people in the Blue Zones experience stress. Stress leads to chronic inflammation, associated with every major age-related disease. What the world’s longest-lived people have that we don’t are routines to shed that stress. Okinawans take a few moments each day to remember their ancestors, Adventists pray, Ikarians take a nap and Sardinians do happy hour.”

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Jabr, F. (2013, Oct. 15). Why your brain needs more downtime. *Scientific American* online. <https://www.scientificamerican.com/article/mental-downtime/>

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Merritt, A. B. (n.d.) *De-Stress Your Life*. UNCW Campus Dietitian. https://uncw.edu/healthservices/documents/De-StressYourLife_000.pdf

Shpancer, N. (2010). Why you should relax about relaxation. *Psychology Today* online. <https://www.psychologytoday.com/us/blog/insight-therapy/201011/why-you-should-relax-about-relaxation>

Smith, B. (n.d.). 21 Science-backed reasons you should take a nap. *Men's Journal* online. <https://www.mensjournal.com/health-fitness/21-science-backed-reasons-you-should-take-nap>

Somers, J. (2007, June 26). Shinto's relationship with Japanese life. *NewStatesman*. <https://www.newstatesman.com/blogs/the-faith-column/2007/06/birth-life-japanese-shinto>

The benefits of napping. (2011). *Harvard Medical School Healthbeat* <https://www.health.harvard.edu/healthbeat/the-benefits-of-napping>

University of California San Diego Center for Mindfulness. (2018). *Guided audio files to practice mindfulness based stress reduction*. University of California San Diego Health. <https://health.ucsd.edu/specialties/mindfulness/programs/mbsr/Pages/audio.aspx>

Power 9: 80% Rule

“Hara hachi bu” – the Okinawan, 2500-year old Confucian mantra said before meals reminds them to stop eating when their stomachs are 80 percent full. The 20% gap between not being hungry and feeling full could be the difference between losing weight or gaining it. People in the Blue Zones eat their smallest meal in the late afternoon or early evening and then they don't eat any more the rest of the day.”

Booth, M. (2013, June 19). The Okinawa diet – could it help you live to 100? *The Guardian*. <https://www.theguardian.com/lifeandstyle/2013/jun/19/japanese-diet-live-to-100>

Barclay, E. (2015, April 11). Eating to break 100: Longevity diet tips from the Blue Zones. *NPR: The Salt*. <https://www.npr.org/sections/thesalt/2015/04/11/398325030/eating-to-break-100-longevity-diet-tips-from-the-blue-zones>

Riley, A. (2017, June 1). The secret to a long and health life? Eat less. *BBC*. <http://www.bbc.com/future/story/20170601-the-secret-to-a-long-and-healthy-life-eat-less>

Roth, Lauren W., and Alex J. Polotsky. Can we live longer by eating less? A review of caloric restriction and longevity. *Maturitas* 71.4 (2012): 315-19.
[http://www.maturitas.org/article/S0378-5122\(12\)00005-9/fulltext](http://www.maturitas.org/article/S0378-5122(12)00005-9/fulltext)

Willcox, D. C., Willcox, B. J., Todoriki, H., Curb, J. D., & Suzuki, M. (2006). Caloric restriction and human longevity: What can we learn from the Okinawans? *Biogerontology*, 7(3), 173-177. <https://link.springer.com/article/10.1007%2Fs10522-006-9008-z>

Power 9: Plant Slant

“Beans, including fava, black, soy and lentils, are the cornerstone of most centenarian diets. Meat—mostly pork—is eaten on average only five times per month. Serving sizes are 3-4 oz., about the size of deck or cards.”

Appel, L. J. (2008). Dietary patterns and longevity: Expanding the Blue Zones. *Circulation*, 118, 214-215. <http://circ.ahajournals.org/content/118/3/214>

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McDonald, M. (2017, Jan. 16). *25 Healthy Plant-Based Dinners the Entire Family Will Love*. Community Table. <https://communitytable.parade.com/560600/melaniemcdonald/25-healthy-plant-based-dinners-the-entire-family-will-love/>

Meatless Monday: Choose to Go Meatless One Day a Week – A Timely Idea that Started 100 Years Ago (2017). (2:49 min.) <https://www.youtube.com/watch?v=Z7PBTu1dtXY>

Mediterranean diet for heart health. (2017 Feb. 17). Mayo Clinic. <http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/mediterranean-diet/art-20047801?pg=2>

MORE RECIPES: Some easy recipes to implement the "plant slant," using a variety of beans:

<https://www.thespruce.com/what-are-fava-beans-995664>
<http://www.onegreenplanet.org/vegan-food/delicious-ways-to-eat-lentils/>
<https://www.thekitchn.com/15-delicious-ways-to-eat-black-beans-227509>
<https://www.thespruce.com/how-to-cook-soy-beans-3376401>

Power 9: Wine at 5

“People in all Blue Zones (except Adventists) drink alcohol moderately and regularly. Moderate drinkers outlive non-drinkers. The trick is to drink 1-2 glasses per day (preferably Sardinian Cannonau wine), with friends and/or with food. And no, you can’t save up all weekend and have 14 drinks on Saturday.”

Morris, M. C. (2017, Jan. 16). The truth about alcohol and brain health. *Neurotrack/Blog*. <http://blog.neurotrack.com/truth-alcohol-brain-health/>

Rogers, R.G., Krueger, P.M., Miech, R., & Lawrence, E. M. (2013). Lifetime abstainers and mortality risk in the United States. *Vienna Yearbook of Population Research*, 11, 165-183. http://www.austriaca.at/0xc1aa500d_0x00307bb9.pdf

Ros, E., Martínez-González, M.A., Estruch, R., et al. (2014). Mediterranean diet and cardiovascular health: Teachings of the PREDIMED Study. *Advances in Nutrition*, 5(3), 330S-336S. <https://academic.oup.com/advances/article/5/3/330S/4562746>

The MIND Diet: A Detailed Guide for Beginners. (n.d.) Healthline. <https://www.healthline.com/nutrition/mind-diet>

The 90+ Study, led by C. Kawas and M. Corrada. <http://www.mind.uci.edu/research-studies/90plus-study/>

Power 9: Belong

“All but five of the 263 centenarians we interviewed belonged to some faith-based community. Denomination doesn’t seem to matter. Research shows that attending faith-based services four times per month will add 4-14 years of life expectancy.”

Eichhorn, J. (2012). Happiness for believers? Contextualizing the effects of religiosity on life-satisfaction. *European Sociological Review*, 28 (5), 583–593. <https://academic.oup.com/esr/article/28/5/583/561177>

Gebauer, J. E., Sedikides, C., & Neberich, W. (2012). Religiosity, social self-esteem, and psychological adjustment: On the cross-cultural specificity of the psychological benefits of religiosity. *Psychological Science* 23(2) 158–160. <http://journals.sagepub.com/doi/pdf/10.1177/0956797611427045>

Jackson, B. R. & Bergeman, C. S. (2011). How does religiosity enhance well-being? The role of perceived control. *Psychology of Religion and Spirituality*, 3(2), 149-161. Abstract: <http://psycnet.apa.org/record/2011-09993-004>

Krause, N. & Wulff, K. M. (2009). Church-based social ties, A sense of belonging in a congregation, and physical health status. *The International Journal for the Psychology of Religion*, 15, 73-93. Abstract:

https://www.tandfonline.com/doi/abs/10.1207/s15327582ijpr1501_6

Stavrova, O. (2015). Religion, self-rated health, and mortality: Whether religiosity delays death depends on the cultural context. *Social Psychological and Personality Science*, 6(8), 911-922. <http://journals.sagepub.com/doi/pdf/10.1177/1948550615593149>

Shor, E., & Roelfs, D. J. (2013). The longevity effects of religious and nonreligious participation: a meta-analysis and meta-regression. *Journal for the Scientific Study of Religion*, 52, 120-145.

<https://academic.oup.com/advances/article/5/3/330S/4562746>

Power 9: Loved Ones First

“Successful centenarians in the Blue Zones put their families first. This means keeping aging parents and grandparents nearby or in the home (It lowers disease and mortality rates of children in the home too.). They commit to a life partner (which can add up to 3 years of life expectancy) and invest in their children with time and love (They’ll be more likely to care for you when the time comes).”

Gordon, D. T. (2001). *Work-Life Balance: Making Family a Priority*. CIO.

<https://www.cio.com/article/2441204/cio-role/work-life-balance--making-family-a-priority.html>

Hitchcott, P. K., & Fastame, M. C. (2017). Psychological well-being in Italian families: An exploratory approach to the study of mental health across the adult life span in the Blue Zone. *Europe’s Journal of Psychology*, 13, 441-454.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5590529/>

Yang, Y. C., Boen, C., Gerken, K., Li, T., Schorpp, K., & Harris, K. M. (2016). Social relationships and physiological determinants of longevity across the human life span. *Proceedings of the National Academy of Sciences*, 113(3), 578-583.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4725506/>

Zunzunegui, M., Beland, F., Sanchez, M., & Otero, A. (2009). Longevity and relationships with children: The importance of the parental role. *BMC Public Health*, 9.

Online. <https://bmcpublikealth.biomedcentral.com/articles/10.1186/1471-2458-9-351>

Power 9: Right Tribe

“The world’s longest lived people chose—or were born into—social circles that supported healthy behaviors, Okinawans created “moais”—groups of five friends that committed to each other for life. Research from the Framingham Studies shows that smoking, obesity, happiness, and even loneliness are contagious. So the social networks of long-lived people have favorably shaped their health behaviors.”

Brody, J. E. (2017, June 12). Social interaction is critical for mental and physical health. *New York Times*. <https://www.nytimes.com/2017/06/12/well/live/having-friends-is-good-for-you.html>

Brown, R. (2015, Aug. 3). How friends can make or break your wellness. *Next Avenue*. <https://www.nextavenue.org/how-friends-can-make-or-break-your-wellness/>

Cornwell, E. Y., & Waite, L. J. (2009). Social disconnectedness, perceived isolation, and health among older adults. *Journal of Health and Social Behavior*, 50(1), 31-48. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2756979/>

Elder, K., & Retrum, J. (2012, May 30). *Framework for Isolation in Adults Over 50* (52 page report). https://www.aarp.org/content/dam/aarp/aarp_foundation/2012_PDFs/AARP-Foundation-Isolation-Framework-Report.pdf

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science*, 10(2), 227–237. <https://www.ahsw.org.uk/userfiles/Research/Perspectives%20on%20Psychological%20Science-2015-Holt-Lunstad-227-37.pdf>

Nicholson, N. R. (2012). A review of social isolation: An important but underassessed condition in older adults. *Journal of Primary Prevention*, 33(2-3), 137-152. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2756979/>

Smith, Judith M, PhD,R.N., G.C.N.S.-B.C. (2012). Portraits of loneliness: Emerging themes among community-dwelling older adults. *Journal of Psychosocial Nursing & Mental Health Services*, 50(4), 34-39. Abstract: <https://www.ncbi.nlm.nih.gov/pubmed/22421010>

Theeke, L. A. (2010). Sociodemographic and health-related risks for loneliness and outcome differences by loneliness status in a sample of older US adults. *Research in Gerontological Nursing*, 3(2), 113-125. Abstract: <https://www.ncbi.nlm.nih.gov/pubmed/20415360>

Centenarians

Arnold, J., Dai, J., Nahapetyan, L., et al. (2010). Predicting successful aging in a population-based sample of Georgia centenarians. *Current Gerontology and Geriatrics Research* online. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2946582/>

Brandon, E. (2013, Jan. 7). What people who live to 100 have in common. *US News & World Report* online. <https://money.usnews.com/money/retirement/articles/2013/01/07/what-people-who-live-to-100-have-in-common>

Jayson, S. (2017). Want to live past 100? Centenarians share their secrets. *Kaiser Health News*, published by *USA Today*. <https://www.usatoday.com/story/news/2017/03/22/kaiser-want-live-past-100-centenarians-share-their-secrets/99510052/>

Poon, L. W., Martin, P., Bishop, A., et al., (2010). Understanding centenarians' psychosocial dynamics and their contributions to health and quality of life. *Current Gerontology and Geriatrics Research*, online. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2948878/>

Willcox, D. C., Willcox, B. J., & Poon, L. W. (2010). Centenarian studies: Important contributors to our understanding of the aging process and longevity. *Current Gerontology and Geriatrics Research* online. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3143446/>

Statistics:

Meyer, J. (2012). *Centenarians: 2010*. (24 page report). U.S. Census Bureau. <https://www.census.gov/prod/cen2010/reports/c2010sr-03.pdf>

Steppler, R. (2016, April 21). *World's centenarian population projected to grow eightfold by 2050*. Pew Research Organization. <http://www.pewresearch.org/fact-tank/2016/04/21/worlds-centenarian-population-projected-to-grow-eightfold-by-2050/>

Xu, J. (2016). Mortality among centenarians in the United States, 2000-2014. *NCHS Data Brief No. 233*, Centers for Disease Control and Prevention. <https://www.cdc.gov/nchs/data/databriefs/db233.htm>

Centenarian Studies Include:

The Georgia Centenarian Study Documentary (Full version) (2011). (1 hour). <https://www.youtube.com/watch?v=nUEP8se3oUs>

New England Centenarian Study <http://www.bumc.bu.edu/centenarian/>

Okinawa Centenarian Study <http://okicent.org/index.html>

Other Longevity Resources

Cohen, R. (2016). The richest Americans live 7 to 10 years longer than the poorest. *Huffington Post* online. https://www.huffingtonpost.com/entry/the-richest-americans-live-7-to-10-years-longer-than-the-poorest_us_5846e4c9e4b0ebac5806a40d

Refers to this original article:

Egen, O., Beatty, K., Blackley, D. J., Brown, K., & Wykoff, R. (2017). Health and Social Conditions of the poorest versus wealthiest counties in the United States. *American Journal of Public Health*. 107(1), 130-135.
<https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2016.303515>

Friedman, H. S., & Martin, L.R. (2011). *The Longevity Project*. New York, NY: Penguin Group. *The below references refer to this study:*

- Greenwood, V. (2011, March 10). The Longevity Project: Decades of data reveal paths to long life. *The Atlantic* online.
<https://www.theatlantic.com/health/archive/2011/03/the-longevity-project-decades-of-data-reveal-paths-to-long-life/72290/>
- 9 big lies about longevity. (n.d.) *CBS News* <https://www.cbsnews.com/pictures/9-big-lies-about-longevity/>
- Secrets to longevity: It's not all about broccoli. (2011, March 24). *NPR*.
<https://www.npr.org/2011/03/24/134827587/secrets-to-longevity-its-not-all-about-broccoli>
- The Longevity Project Summary (2016, Nov. 15). *Four Minute Books*.
<https://fourminutebooks.com/the-longevity-project-summary/>
- The Week Staff. (2011, March 11). 'The Longevity Project': 5 (surprising) secrets to living longer. *The Week* online.
<http://theweek.com/articles/486433/longevity-project-5-surprising-secrets-living-longer>

O'Neil, K. (2018, February 17). Science begins to unlock the secrets of brains that age well. *American Association for the Advancement of Science*.
<https://www.aaas.org/news/science-begins-unlock-secrets-brains-age-well>

Poulain, M., Herm, A., & Pes, G. (2013). The Blue Zones: Areas of exceptional longevity around the world. *Vienna Yearbook of Population Research*, 11, 87-108. http://www.austriaca.at/0xc1aa500d_0x00307bb6.pdf

ALSO, see other articles in this issue on determinants of unusual and differential longevity <https://www.oeaw.ac.at/en/vid/publications/serial-publications/vienna-yearbook-of-population-research/vienna-yearbook-of-population-research-2013-vol-11/>

Videos

Change the Way You Think About Age! Centenarians Answer the Right Questions. (2015). (11:42. min.) United Nations. <https://www.youtube.com/watch?v=eBP8ycObpbU>

LifeHunters. (2016). *Life Lessons From 100-year-olds.* (13:29 min.)
<https://www.youtube.com/watch?v=9AThycGCakk>

The Quest for Eternal Youth (2014). Dr. Bradley Willcox, MD, TEDx Talk describing his research findings from Okinawa. Includes video of his first interview with centenarian in Okinawa. (18:52 min.) <https://www.youtube.com/watch?v=BBXPtVDpAWw>

Dan Buettner: How to live to be 100+. (2010). (22:11 min.).
<https://www.youtube.com/watch?v=l-jk9ni4XWk&t=1s>

Your Personal "Blue Zone." (2015). Nick Buettner, TEDxFridley (13:54 min.)
<https://www.youtube.com/watch?v=zmYgsxoR9o>

This selection of free web-based resources was compiled by the GRN 440/540 *Current Issues in Gerontology* class, Jenni Blair, and Anne P. Glass, Ph.D., Gerontology Program Coordinator.

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<https://uncw.edu/oss/gerontology.html>