

doTERRA Essential Oils Scientific References Bibliography

The Science of Aroma and Touch

1. Hertenstein M, et al. Touch communicates distinct emotions. *Emotion.* 2006;6(3):528-533.
2. Thompson E. and Hampton J. The effect of relationship status on communicating emotions through touch. *Cognition and Emotion.* 2011; 25(2):295-306.
3. Chatel-Goldman J, et al. Touch increases autonomic coupling between romantic partners. *Frontiers in Behavioral Neuroscience.* 2014; 8:95.
4. Uvnas-Moberg, K, et al. Self-soothing behaviors with particular reference to oxytocin release induced by non-noxious sensory stimulation. *Frontiers in Psychology.* 2014; 5:1529.

The Science of Cypress

1. M. Kusuvara, K. Urakami, Y. Masuda, V. Zangiacomi, H. Ishii, S. Tai, K. Maruyama, and K. Yamaguchi, “Fragrant environment with α -pinene decreases tumor growth in mice,” *Biomed. Res. Tokyo Jpn.*, vol. 33, no. 1, pp. 57–61, Feb. 2012.
2. H. J. Dorman and S. G. Deans, “Antimicrobial agents from plants: antibacterial activity of plant volatile oils,” *J. Appl. Microbiol.*, vol. 88, no. 2, pp. 308–316, Feb. 2000.

Chemistry of Pink Pepper

1. Siqueira HDS, Neto BS, Sousa DP, et al. α -Phellandrene, a cyclic monoterpene, attenuates inflammatory response through neutrophil migration inhibition and mast cell degranulation. *Life Sci.* 2016;160:27-33. doi:10.1016/j.lfs.2016.07.008

2. Lin J-J, Lin J-H, Hsu S-C, et al. Alpha-phellandrene promotes immune responses in normal mice through enhancing macrophage phagocytosis and natural killer cell activities. *Vivo Athens Greece*. 2013;27(6):809-814.
3. Jing L, Zhang Y, Fan S, et al. Preventive and ameliorating effects of citrus D-limonene on dyslipidemia and hyperglycemia in mice with high-fat diet-induced obesity. *Eur J Pharmacol*. 2013;715(1-3):46-55. doi:10.1016/j.ejphar.2013.06.022

Keeping Pets Healthy and Happy

1. <https://www.nature.com/articles/s41598-017-16118-6>
2. <https://www.sciencedirect.com/science/article/pii/S0091674917314392>
3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3408111/>

Lemon Myrtle

1. Wilkinson JM, Hipwell M, Ryan T, Cavanagh HMA. Bioactivity of Backhousia citriodora: antibacterial and antifungal activity. *J Agric Food Chem*. 2003;51(1):76-81. doi:10.1021/jf0258003
2. Kim J m., Marshall M, Cornell J a., Iii J f. P, Wei C i. Antibacterial Activity of Carvacrol, Citral, and Geraniol against *Salmonella typhimurium* in Culture Medium and on Fish Cubes. *J Food Sci*. 1995;60(6):1364-1368. doi:10.1111/j.1365-2621.1995.tb04592.x
3. Subramanyan SD, Natarajan A kumar. Citral, A Monoterpene Protect Against High Glucose Induced Oxidative Injury in HepG2 Cell In Vitro-An Experimental Study. *J Clin Diagn Res JCDR*. 2017;11(8):BC10-BC15. doi: 10.7860/JCDR/2017/28470.10377
4. Uchida NS, Silva-Filho SE, Cardia GFE, et al. Hepatoprotective Effect of Citral on Acetaminophen-Induced

Liver Toxicity in Mice. Evid-Based Complement Altern Med ECAM. 2017;2017. doi:10.1155/2017/1796209

doTERRA Breathe® and the Science of Sighing

1. Vlemincx E, Van diest I, Van den bergh O. Emotion, sighing, and respiratory variability. *Psychophysiology*. 2015;52(5):657-66.
2. Tobin MJ, Chadha TS, Jenouri G, Birch SJ, Gazeroglu HB, Sackner MA. Breathing patterns. 2. Diseased subjects. *Chest*. 1983;84(3):286-94.
3. Vlemincx E, Van diest I, Van den bergh O. A sigh of relief or a sigh to relieve: The psychological and physiological relief effect of deep breaths. *Physiol Behav*. 2016;165:127-35.
4. Zhao C, Sun J, Fang C, Tang F. 1,8-cineol attenuates LPS-induced acute pulmonary inflammation in mice. *Inflammation*. 2014;37(2):566-72.
5. Lee HS, Park DE, Song WJ, et al. Effect of 1.8-Cineole in Dermatophagoides pteronyssinus-Stimulated Bronchial Epithelial Cells and Mouse Model of Asthma. *Biol Pharm Bull*. 2016;39(6):946-52.
6. Sudhoff H, Klenke C, Greiner JF, et al. 1,8-Cineol Reduces Mucus-Production in a Novel Human Ex Vivo Model of Late Rhinosinusitis. *PLoS ONE*. 2015;10(7):e0133040.
7. Seol GH, Kim KY. Eucalyptol and Its Role in Chronic Diseases. *Adv Exp Med Biol*. 2016;929:389-398.
8. Laude EA, Morice AH, Grattan TJ. The antitussive effects of menthol, camphor and cineole in conscious guinea-pigs. *Pulm Pharmacol*. 1994;7(3):179-84.
9. Liu B, Fan L, Balakrishna S, Sui A, Morris JB, Jordt SE.

TRPM8 is the principal mediator of menthol-induced analgesia of acute and inflammatory pain. *Pain*. 2013;154(10):2169-77.

10. Ha MA, Smith GJ, Cichocki JA, et al. Menthol attenuates respiratory irritation and elevates blood cotinine in cigarette smoke exposed mice. *PLoS ONE*. 2015;10(2):e0117128.
11. Willis DN, Liu B, Ha MA, Jordt SE, Morris JB. Menthol attenuates respiratory irritation responses to multiple cigarette smoke irritants. *FASEB J*. 2011;25(12):4434-44.

Yarrow|Pom

1. Shabbir MA, Khan MR, Saeed M, Pasha I, Khalil AA, Siraj N. Punicic acid: A striking health substance to combat metabolic syndromes in humans. *Lipids Health Dis*. 2017;16(1):99.

Fennel Oil and Curcumin Extract for Bowel Regularity

1. Di Ciaula A, Portincasa P, Maes N, et al. Efficacy of bio-optimized extracts of turmeric and essential fennel oil on the quality of life in patients with irritable bowel syndrome. *Ann Gastroenterol*. 2018;31(6):685-691.doi: 10.20524/aog.2018.0304

Copaiba Meta-Analysis

1. Ferro M, et al. Meta-analysis on Copaiba Oil: Its Functions in Metabolism and Its Properties as an Anti-inflammatory Agent. Thieme. 2018. DOI:10.1055/s-0038-1669390.

Peppermint Essential Oil and Cognitive Function

1. Kennedy D, Okello E, Chazot P, et al. Volatile Terpenes and Brain Function: Investigation of the Cognitive and Mood Effects of *Mentha × Piperita* L. Essential Oil with In Vitro Properties Relevant to Central Nervous System Function. *Nutrients*. 2018;10(8). pii: E1029. doi: 10.3390/nu10081029.

Essential Oil Mouthwash Trials

1. Richards D. Effect of essential oil mouthwashes on plaque and gingivitis. *Evid Based Dent*. 2017 Jun 23;18(2):39-40. doi: 10.1038/sj.ebd.6401233.
2. Marieb, E. N., Hoehn, K., & Hutchinson, M. (2013). Human anatomy & physiology. San Francisco, CA: Pearson Education/Benjamin Cummings.

Gastroprotective Effects of Ginger and Turmeric Essential Oils

1. Liju VB, Jeena K, Kuttan R. Gastroprotective activity of essential oils from turmeric and ginger. *J Basic Clin Physiol Pharmacol*. 2015;26(1):95-103.

Turmeric Essential Oil

1. Chandran, Binu, and Ajay Goel. "A Randomized, Pilot Study to Assess the Efficacy and Safety of Curcumin in Patients with Active Rheumatoid Arthritis." *Phytotherapy research: PTR* 26.11 (2012): 1719–1725.
2. Park SY, Kim YH, Kim Y, Lee SJ. Aromatic-turmerone's anti-inflammatory effects in microglial cells are mediated by protein kinase A and heme oxygenase-1 signaling.

Neurochem Int. 2012;61(5):767-77.

AromaTouch® Hand Technique Study

1. Bahr T, Allred K, Martinez D, Rodriguez D, and Winterton P. Effects of a massage-like essential oil application procedure using Copaiba and Deep Blue oils in individuals with hand arthritis. Complementary Therapies in Clinical Practice. 2018. doi.org/10.1016/j.ctcp.2018.10.004.

Carvone

1. J. C. R. Gonçalves, F. de S. Oliveira, R. B. Benedito, D. P. de Sousa, R. N. de Almeida, and D. A. M. de Araújo, “Antinociceptive activity of (-)-carvone: evidence of association with decreased peripheral nerve excitability,” Biol. Pharm. Bull., vol. 31, no. 5, pp. 1017–1020, 2008.
2. F. V. M. Souza, M. B. da Rocha, D. P. de Souza, and R. M. Marçal, “(-)-Carvone: Antispasmodic effect and mode of action,” Fitoterapia, vol. 85, pp. 20–24, Mar. 2013.
3. E. Ayd n, H. Turkez, and M. S. Keles, “Potential anticancer activity of carvone in N2a neuroblastoma cell line,” Toxicol. Ind. Health, vol. 31, no. 8, pp. 764–772, Aug. 2015.
4. S. Abe et al., “Suppression of tumor necrosis factor-alpha-induced neutrophil adherence responses by essential oils.,” Mediators Inflamm., vol. 12, no. 6, pp. 323–328, Dec. 2003.
5. D. P. De Sousa, F. F. De Farias nóbrega, and R. N. De Almeida, “Influence of the chirality of (R)-(-)- and (S)-(+) -carvone in the central nervous system: A comparative study,” Chirality, vol. 19, no. 4, pp. 264–268, May 2007.
6. J. C. R. Gonçalves, A. de M. H. Alves, A. E. V. de Araújo, J. S. Cruz, and D. A. M. Araújo, “Distinct effects of carvone analogues on the isolated nerve of rats,” Eur. J. Pharmacol., vol. 645, no. 1–3, pp. 108–112, Oct. 2010.
7. N. A. Jaradat et al., “The effect of inhalation of Citrus

sinensis flowers and *Mentha spicata* leave essential oils on lung function and exercise performance: a quasi-experimental uncontrolled before-and-after study," *J. Int. Soc. Sports Nutr.*, vol. 13, no. 1, Dec. 2016.

Cinnamaldehyde

1. M. Keshvari, S. Asgary, A. Jafarian-Dehkordi, S. Najafi, and S. M. Ghoreyshi-Yazdi, "Preventive effect of cinnamon essential oil on lipid oxidation of vegetable oil," *ARYA Atheroscler.*, vol. 9, no. 5, pp. 280–286, Sep. 2013.
2. S.-G. Ahn, Y.-H. Jin, J.-H. Yoon, and S.-A. Kim, "The anticancer mechanism of 2'-hydroxycinnamaldehyde in human head and neck cancer cells," *Int. J. Oncol.*, vol. 47, no. 5, pp. 1793–1800, Nov. 2015.
3. W.-Y. Bae, J.-S. Choi, J.-E. Kim, and J.-W. Jeong, "Cinnamic aldehyde suppresses hypoxia-induced angiogenesis via inhibition of hypoxia-inducible factor-1 α expression during tumor progression," *Biochem. Pharmacol.*, vol. 98, no. 1, pp. 41–50, Nov. 2015.
4. J. S. Muhammad et al., "Anti-inflammatory effect of cinnamaldehyde in *Helicobacter pylori* induced gastric inflammation," *Biol. Pharm. Bull.*, vol. 38, no. 1, pp. 109–115, 2015.
5. M. S. Nieto-Bobadilla et al., "Controlled delivery of a new broad spectrum antibacterial agent against colitis: In vitro and in vivo performance," *Eur. J. Pharm. Biopharm. Off. J. Arbeitsgemeinschaft Für Pharm. Verfahrenstechnik EV*, vol. 96, pp. 152–161, Oct. 2015.
6. L.-T. Lin, S.-J. Wu, and C.-C. Lin, "The Anticancer Properties and Apoptosis-inducing Mechanisms of Cinnamaldehyde and the Herbal Prescription Huang-Lian-Jie-Du-Tang (黃連解毒湯 Huáng Lián Jiě Dú Tang) in Human Hepatoma Cells," *J. Tradit. Complement. Med.*, vol. 3, no. 4, pp. 227–233,

2013.

7. A. Mishra, R. Bhatti, A. Singh, and M. P. Singh Ishar, "Ameliorative effect of the cinnamon oil from *Cinnamomum zeylanicum* upon early stage diabetic nephropathy," *Planta Med.*, vol. 76, no. 5, pp. 412–417, Mar. 2010.
8. Y.-H. Chen, Y.-N. Lin, W.-C. Chen, W.-T. Hsieh, and H.-Y. Chen, "Treatment of Stress Urinary Incontinence by Cinnamaldehyde, the Major Constituent of the Chinese Medicinal Herb Ramulus Cinnamomi," *Evid. Based Complement. Alternat. Med.*, vol. 2014, pp. 1–10, 2014.
9. J. Huang, S. Wang, X. Luo, Y. Xie, and X. Shi, "Cinnamaldehyde reduction of platelet aggregation and thrombosis in rodents," *Thromb. Res.*, vol. 119, no. 3, pp. 337–342, Jan. 2007.
10. J. Zhao et al., "Cinnamaldehyde inhibits inflammation and brain damage in a mouse model of permanent cerebral ischaemia," *Br. J. Pharmacol.*, vol. 172, no. 20, pp. 5009–5023, Oct. 2015.
11. S.-T. Chou, W.-L. Chang, C.-T. Chang, S.-L. Hsu, Y.-C. Lin, and Y. Shih, "Cinnamomum cassia Essential Oil Inhibits α-MSH-Induced Melanin Production and Oxidative Stress in Murine B16 Melanoma Cells," *Int. J. Mol. Sci.*, vol. 14, no. 9, pp. 19186–19201, Sep. 2013.
12. M. Saleem, H. N. Bhatti, M. I. Jilani, and M. A. Hanif, "Bioanalytical evaluation of *Cinnamomum zeylanicum* essential oil," *Nat. Prod. Res.*, vol. 29, no. 19, pp. 1857–1859, 2015.
13. S. F. Nabavi, A. Di Lorenzo, M. Izadi, E. Sobarzo-Sánchez, M. Daghia, and S. M. Nabavi, "Antibacterial Effects of Cinnamon: From Farm to Food, Cosmetic and Pharmaceutical Industries," *Nutrients*, vol. 7, no. 9, pp. 7729–7748, Sep. 2015.
14. N. Takasao, K. Tsuji-Naito, S. Ishikura, A. Tamura, and M. Akagawa, "Cinnamon extract promotes type I collagen

biosynthesis via activation of IGF-I signaling in human dermal fibroblasts,” J. Agric. Food Chem., vol. 60, no. 5, pp. 1193–1200, Feb. 2012.

Cuminal/Cuminaldehyde

1. V. R. Preedy, Ed., Essential Oils in Food Preservation, Flavor and Safety, 1 edition. Boston, MA: Academic Press, 2015.
2. H.-S. Lee, “Cuminaldehyde: Aldose Reductase and α-Glucosidase Inhibitor Derived from Cuminum cyminum L. Seeds,” J. Agric. Food Chem., vol. 53, no. 7, pp. 2446–2450, Apr. 2005.
3. J. Wei, X. Zhang, Y. Bi, R. Miao, Z. Zhang, and H. Su, “Anti-Inflammatory Effects of Cumin Essential Oil by Blocking JNK, ERK, and NF-κB Signaling Pathways in LPS-Stimulated RAW 264.7 Cells,” Evid.-Based Complement. Altern. Med. ECAM, vol. 2015, 2015.
4. K. Tsai et al., “Cuminaldehyde from Cinnamomum verum Induces Cell Death through Targeting Topoisomerase 1 and 2 in Human Colorectal Adenocarcinoma COLO 205 Cells,” Nutrients, vol. 8, no. 6, p. 318, May 2016.
5. S. Yang et al., “Molecular Mechanism of Cinnamomum verum Component Cuminaldehyde Inhibits Cell Growth and Induces Cell Death in Human Lung Squamous Cell Carcinoma NCI-H520 Cells In Vitro and In Vivo,” J. Cancer, vol. 7, no. 3, pp. 251–261, Jan. 2016.

Carvacrol

1. Chen W, Xu B, Xiao A, et al. TRPM7 inhibitor carvacrol protects brain from neonatal hypoxic-ischemic injury. Mol Brain. 2015;8:11.
2. Li WT, Zhang SY, Zhou YF, et al. Carvacrol attenuates traumatic neuronal injury through store-operated Ca(2+)

- entry-independent regulation of intracellular Ca(2+) homeostasis. *Neurochem Int.* 2015;90:107-13.
3. Chen WL, Barszczyk A, Turlova E, et al. Inhibition of TRPM7 by carvacrol suppresses glioblastoma cell proliferation, migration and invasion. *Oncotarget.* 2015;6(18):16321-40.
 4. Fan K, Li X, Cao Y, et al. Carvacrol inhibits proliferation and induces apoptosis in human colon cancer cells. *Anticancer Drugs.* 2015;26(8):813-23.
 5. Suntres ZE, Coccimiglio J, Alipour M. The bioactivity and toxicological actions of carvacrol. *Crit Rev Food Sci Nutr.* 2015;55(3):304-18.
 6. Lee KP, Sudjarwo GW, Jung SH, et al. Carvacrol inhibits atherosclerotic neointima formation by downregulating reactive oxygen species production in vascular smooth muscle cells. *Atherosclerosis.* 2015;240(2):367-73.
 7. Fan K, Li X, Cao Y, et al. Carvacrol inhibits proliferation and induces apoptosis in human colon cancer cells. *Anticancer Drugs.* 2015;26(8):813-23.
 7. Maryam K, Shakeri S, Kiani K. Preparation and in vitro investigation of antigastric cancer activities of carvacrol-loaded human serum albumin nanoparticles. *IET Nanobiotechnol.* 2015;9(5):294-9.
 8. Liang WZ, Chou CT, Lu T, et al. The mechanism of carvacrol-evoked [Ca2+]i rises and non-Ca2+-triggered cell death in OC2 human oral cancer cells. *Toxicology.* 2013;303:152-61.
 9. Jayakumar S, Madankumar A, Asokkumar S, et al. Potential preventive effect of carvacrol against diethylnitrosamine-induced hepatocellular carcinoma in rats. *Mol Cell Biochem.* 2012;360(1-2):51-60.
 10. Luo Y, Wu JY, Lu MH, Shi Z, Na N, Di JM. Carvacrol Alleviates Prostate Cancer Cell Proliferation, Migration, and Invasion through Regulation of PI3K/Akt and MAPK Signaling Pathways. *Oxid Med Cell Longev.*

2016;2016:1469693.

11. Arunasree KM. Anti-proliferative effects of carvacrol on a human metastatic breast cancer cell line, MDA-MB 231. *Phytomedicine*. 2010;17(8-9):581-8.
12. Sánchez C, Aznar R, Sánchez G. The effect of carvacrol on enteric viruses. *Int J Food Microbiol*. 2015;192:72-6.
13. Pastor J, García M, Steinbauer S, et al. Combinations of ascaridole, carvacrol, and caryophyllene oxide against *Leishmania*. *Acta Trop*. 2015;145:31-8.
14. Tabari MA, Youssefi MR, Barimani A, Araghi A. Carvacrol as a potent natural acaricide against *Dermanyssus gallinae*. *Parasitol Res*. 2015;114(10):3801-6.
15. Mansour SA, Messeha SS, El-gengaihi SE. Botanical biocides. 4. Mosquitocidal activity of certain *Thymus capitatus* constituents. *J Nat Toxins*. 2000;9(1):49-62.
16. Joca HC, Vieira DC, Vasconcelos AP, Araújo DA, Cruz JS. Carvacrol modulates voltage-gated sodium channels kinetics in dorsal root ganglia. *Eur J Pharmacol*. 2015;756:22-9.
17. Kara M, Uslu S, Demirci F, Temel HE, Baydemir C. Supplemental carvacrol can reduce the severity of inflammation by influencing the production of mediators of inflammation. *Inflammation*. 2015;38(3):1020-7.

Bornyl Acetate

1. Watanabe K, Shimizu N. Identification of a sex pheromone of the chrysanthemum lace bug *Corythucha marmorata* (Hemiptera: Tingidae). *Sci Rep*. 2017 Aug 4;7(1):7302. doi: 10.1038/s41598-017-06783-y.
2. Matsubara E, Fukagawa M, Okamoto T, Ohnuki K, Shimizu K, Kondo R. (-)-Bornyl acetate induces autonomic relaxation and reduces arousal level after visual display terminal work without any influences of task performance in low-dose condition. *Biomed Res*. 2011 Apr;32(2):151-7.
3. Buchbauer G, Jäger W, Jirovetz L, Meyer F, Dietrich H.

[Effects of valerian root oil, borneol, isoborneol, bornyl acetate and isobornyl acetate on the motility of laboratory animals (mice) after inhalation]. Pharmazie. 1992 Aug;47(8): 620-2. German.

4. Yang H, Zhao R, Chen H, Jia P, Bao L, Tang H. Bornyl acetate has an anti-inflammatory effect in human chondrocytes via induction of IL-11. IUBMB Life. 2014 Dec; 66(12):854-9. doi: 10.1002/iub.1338. Epub 2014 Dec 25.
5. Chen N, Sun G, Yuan X, Hou J, Wu Q, Soromou LW, Feng H. Inhibition of lung inflammatory responses by bornyl acetate is correlated with regulation of myeloperoxidase activity. J Surg Res. 2014 Jan;186(1):436-45. doi: 10.1016/j.jss.2013.09.003. Epub 2013 Sep 29.
6. Wu X, Li X, Xiao F, Zhang Z, Xu Z, Wang H. [Studies on the analgesic and anti-inflammatory effect of bornyl acetate in volatile oil from Amomum villosum].Zhong Yao Cai. 2004 Jun;27(6):438-9. Chinese.
7. Li J, Wang SX. Synergistic enhancement of the antitumor activity of 5-fluorouracil by bornyl acetate in SGC-7901 human gastric cancer cells and the determination of the underlying mechanism of action. J BUON. 2016 Jan-Feb; 21(1):108-17.
8. Kim SH, Lee SY, Hong CY, Gwak KS, Park MJ, Smith D, Choi IG. Whitening and antioxidant activities of bornyl acetate and nezukol fractionated from Cryptomeria japonica essential oil. Int J Cosmet Sci. 2013 Oct;35(5):484-90. doi: 10.1111/ics.12069. Epub 2013 Jul 6.

doTERRA Black Pepper Study

1. Han X., Beaumont C., Rodriguez D., and Bahr T. Black pepper (*Piper nigrum*) essential oil demonstrates tissue remodeling and metabolism modulating potential in human cells. Phytotherapy Research.2018. doi.org/10.1002/ptr. 6110.

2. Jeena K, Liju VB, Umadevi NP, Kuttan R. 2014. Antioxidant, anti-inflammatory and antinociceptive properties of black pepper essential oil (*Piper nigrum* Linn). *J Essent Oil Bear Plants.* 17:1–12.
3. Varga ZV, Matyas C, Erdelyi K, Cinar R, Nieri D, Chicca A, Nemeth BT, Paloczi J, Lajtos T, Corey L, et al. 2017. Beta-caryophyllene protects against alcoholic steatohepatitis by attenuating inflammation and metabolic dysregulation in mice. *Br J Pharmacol.* 137:22.

doTERRA AromaTouch Study

Bahr T, Rodriguez D, Allred K. Immediate and Lasting Effects of the dōTERRA AromaTouch Technique, a Topical Essential Oil Application Procedure, on Autonomic Function and Salivary Biomarkers: A Pilot Trial. *J Integrative Med Ther.* 2018;5(1): 7.

Nerol

1. González-Ramírez AE, González-Trujano ME, Orozco-Suárez SA, et al. Nerol alleviates pathologic markers in the oxazolone-induced colitis model. *Eur J Pharmacol.* 2016;776:81–89. doi: 10.1016/j.ejphar.2016.02.036

Eugenol

1. G. P. Kamatou, I. Vermaak, and A. M. Viljoen, “Eugenol—From the Remote Maluku Islands to the International Market Place: A Review of a Remarkable and Versatile Molecule,” *Molecules*, vol. 17, no. 12, pp. 6953–6981, Jun. 2012.
2. M. Islamuddin, D. Sahal, and F. Afrin, “Apoptosis-like death in *Leishmania donovani* promastigotes induced by eugenol-rich oil of *Syzygium aromaticum*,” *J. Med. Microbiol.*, vol. 63, no. Pt_1, pp. 74–85, Jan. 2014.
3. B. Yogalakshmi, P. Viswanathan, and C. V. Anuradha,

“Investigation of antioxidant, anti-inflammatory and DNA-protective properties of eugenol in thioacetamide-induced liver injury in rats,” *Toxicology*, vol. 268, no. 3, pp. 204–212, Feb. 2010.

4. Y. Saeki, Y. Ito, M. Shibata, Y. Sato, K. Okuda, and I. Takazoe, “Antimicrobial action of natural substances on oral bacteria,” *Bull. Tokyo Dent. Coll.*, vol. 30, no. 3, pp. 129–135, Aug. 1989.
5. S. V. Kothiwale, V. Patwardhan, M. Gandhi, R. Sohoni, and A. Kumar, “A comparative study of antiplaque and antigingivitis effects of herbal mouthrinse containing tea tree oil, clove, and basil with commercially available essential oil mouthrinse,” *J. Indian Soc. Periodontol.*, vol. 18, no. 3, pp. 316–320, May 2014.
6. S. A. Guénette, A. Ross, J.-F. Marier, F. Beaudry, and P. Vachon, “Pharmacokinetics of eugenol and its effects on thermal hypersensitivity in rats,” *Eur. J. Pharmacol.*, vol. 562, no. 1–2, pp. 60–67, May 2007.

doTERRA Black Pepper Study

1. Han X., Beamont C., Rodriguez D., and Bahr T. Black pepper (*Piper nigrum*) essential oil demonstrates tissue remodeling and metabolism modulating potential in human cells. *Phytotherapy Research*.2018. doi.org/10.1002/ptr. 6110.
2. Jeena K, Liju VB, Umadevi NP, Kuttan R. 2014. Antioxidant, anti-inflammatory and antinociceptive properties of black pepper essential oil (*Piper nigrum* Linn). *J Essent Oil Bear Plants*.17:1–12.
3. Varga ZV, Matyas C, Erdelyi K, Cinar R, Nieri D, Chicca A, Nemeth BT, Paloczi J, Lajtos T, Corey L, et al. 2017. Beta-caryophyllene protects against alcoholic steatohepatitis by attenuating inflammation and metabolic dysregulation in mice. *Br J Pharmacol*. 13722.

Chamazulene

1. Capuzzo A, Occhipinti A, Maffei ME. Antioxidant and radical scavenging activities of chamazulene. *Nat Prod Res.* 2014;28(24):2321-3.
2. Rekka EA, Kourounakis AP, Kourounakis PN. Investigation of the effect of chamazulene on lipid peroxidation and free radical processes. *Res Commun Mol Pathol Pharmacol.* 1996;92(3):361-4.
3. Querio G, Antoniotti S, Foglietta F, et al. Chamazulene Attenuates ROS Levels in Bovine Aortic Endothelial Cells Exposed to High Glucose Concentrations and Hydrogen Peroxide. *Front Physiol.* 2018;9:246.
4. Ornano L, Venditti A, Ballero M, et al. Chemopreventive and antioxidant activity of the chamazulene-rich essential oil obtained from *Artemisia arborescens* L. growing on the Isle of La Maddalena, Sardinia, Italy. *Chem Biodivers.* 2013;10(8):1464-74.
5. Agatonovic-kustrin S, Babazadeh ortakand D, Morton DW, Yusof AP. Rapid evaluation and comparison of natural products and antioxidant activity in calendula, feverfew, and German chamomile extracts. *J Chromatogr A.* 2015;1385:103-10.
6. Mohammadi A, Sani TA, Ameri AA, Imani M, Golmakani E, Kamali H. Seasonal variation in the chemical composition, antioxidant activity, and total phenolic content of *Artemisia absinthium* essential oils. *Pharmacognosy Res.* 2014;7(4):329-34.
7. Ramadan M, Goeters S, Watzer B, et al. Chamazulene carboxylic acid and matricin: a natural profen and its natural prodrug, identified through similarity to synthetic drug

substances. J Nat Prod. 2006;69(7):1041-5.

Bees and Essential Oils

1. Imdorf A, Bogdanov S, Ochoa RI, Calderone NW. Use of essential oils for the control of Varroa jacobsoni Oud. in honey bee colonies. Apidologie. 1999;30: 209-228.
2. Sabahi Q, Gashout H, Kelly PG, Guzman-Novoa E. Continuous release of oregano oil effectively and safely controls Varroa destructor infestations in honey bee colonies in a northern climate. Experimental & Applied Acarology. 2017;72(3):263-275.
3. Palmer-young EC, Sadd BM, Irwin RE, Adler LS. Synergistic effects of floral phytochemicals against a bumble bee parasite. Ecol Evol. 2017;7(6):1836-1849.

doTERRA On Guard® Study

1. Berg, E. L., Yang, J., Melrose, J., Nguyen, D., Privat, S., Rosler, E., . . . Ekins, S. (2010). Chemical target and pathway toxicity mechanisms defined in primary human cell systems. Journal of Pharmacological and Toxicological Methods, 61(1), 3-15
2. Bergamini, G., Bell, K., Shimamura, S., Werner, T., Cansfield, A., Müller, K., . . . Neubauer, G. (2012). A selective inhibitor reveals PI3K γ dependence of T(H)17 cell differentiation. Nature Chemical Biology, 8(6), 576–582. <https://doi.org/10.1038/nchembio.957>
3. Han, X., Parker, T. L., & Dorsett, J. (2017). An essential oil blend significantly modulates immune responses and the cell cycle in human cell cultures. Cogent Biology, 3(1), 1340112. <https://doi.org/10.1080/23312025.2017.1340112>

Chemistry of doTERRA Breathe® Respiratory Drops

1. Begrow F, Böckenholt C, Ehmen M, Wittig T, Verspohl EJ. Effect of myrtol standardized and other substances on the respiratory tract: ciliary beat frequency and mucociliary clearance as parameters. *Adv Ther.* 2012;29(4):350-8.
2. Zhao C, Sun J, Fang C, Tang F. 1,8-cineol attenuates LPS-induced acute pulmonary inflammation in mice. *Inflammation.* 2014;37(2):566-72.
3. Lee HS, Park DE, Song WJ, et al. Effect of 1.8-Cineole in Dermatophagoides pteronyssinus-Stimulated Bronchial Epithelial Cells and Mouse Model of Asthma. *Biol Pharm Bull.* 2016;39(6):946-52.
4. Sudhoff H, Klenke C, Greiner JF, et al. 1,8-Cineol Reduces Mucus-Production in a Novel Human Ex Vivo Model of Late Rhinosinusitis. *PLoS ONE.* 2015;10(7):e0133040.
5. Seol GH, Kim KY. Eucalyptol and Its Role in Chronic Diseases. *Adv Exp Med Biol.* 2016;929:389-398.
6. Laude EA, Morice AH, Grattan TJ. The antitussive effects of menthol, camphor and cineole in conscious guinea-pigs. *Pulm Pharmacol.* 1994;7(3):179-84.
7. Liu B, Fan L, Balakrishna S, Sui A, Morris JB, Jordt SE. TRPM8 is the principal mediator of menthol-induced analgesia of acute and inflammatory pain. *Pain.* 2013;154(10):2169-77.
8. Ha MA, Smith GJ, Cichocki JA, et al. Menthol attenuates respiratory irritation and elevates blood cotinine in cigarette smoke exposed mice. *PLoS ONE.* 2015;10(2):e0117128.

9. Willis DN, Liu B, Ha MA, Jordt SE, Morris JB. Menthol attenuates respiratory irritation responses to multiple cigarette smoke irritants. *FASEB J.* 2011;25(12):4434-44.
10. Ozogul Y, Kuley E, Ucar Y, Ozogul F. Antimicrobial Impacts of Essential Oils on Food Borne-Pathogens. *Recent Pat Food Nutr Agric.* 2015;7(1):53-61.
11. Bacanlı M, Başaran AA, Başaran N. The antioxidant and antigenotoxic properties of citrus phenolics limonene and naringin. *Food Chem Toxicol.* 2015;81:160-70.
12. De sousa DP, Mesquita RF, De araújo ribeiro LA, De lima JT. Spasmolytic Activity of Carvone and Limonene Enantiomers. *Nat Prod Commun.* 2015;10(11):1893-6.
13. Valente J, Zuzarte M, Gonçalves MJ, et al. Antifungal, antioxidant and anti-inflammatory activities of *Oenanthe crocata* L. essential oil. *Food Chem Toxicol.* 2013;62:349-54.
14. Glisic, S., Milojevic, S., Dimitrijevic, S., Orlovic, A., & Skala, D. (2007). Antimicrobial activity of the essential oil and different fractions of *Juniperus communis* L. and a comparison with some commercial antibiotics. *Journal of the Serbian Chemical Society*, 72(4), 311-320. doi:10.2298/jsc0704311g
15. Berger, R. G. (2007). *Flavours and fragrances: Chemistry, bioprocessing and sustainability*. Berlin: Springer.
16. Li H, Yang T, Li FY, Yao Y, Sun ZM. Antibacterial activity and mechanism of action of *Monarda punctata* essential oil and its main components against common bacterial pathogens in respiratory tract. *Int J Clin Exp Pathol.*

2014;7(11):7389-98.

doTERRA Cinnamon Bark Study

Han X, Parker TL. Antiinflammatory Activity of Cinnamon (*Cinnamomum zeylanicum*) Bark Essential Oil in a Human Skin Disease Model. *Phytotherapy Research*. 2017;31(7):1034-1038. doi:10.1002/ptr.5822.

Skin Cells and Essential Oils

1. Han, X., Beaumont, C., Stevens, N., & Parker, T. L. (2017). Chemical composition analysis and in vitro biological activities of ten essential oils in human skin cells. *Biochimie Open*. doi:10.1016/j.biopen.2017.04.001
2. Berg, E. L., Yang, J., Melrose, J., Nguyen, D., Privat, S., Rosler, E., . . . Ekins, S. (2010). Chemical target and pathway toxicity mechanisms defined in primary human cell systems. *Journal of Pharmacological and Toxicological Methods*, 61(1), 3-15
3. Bergamini, G., Bell, K., Shimamura, S., Werner, T., Cansfield, A., Müller, K., . . . Neubauer, G. (2012). A selective inhibitor reveals PI3K γ dependence of T(H)17 cell differentiation. *Nature Chemical Biology*, 8(6), 576–582. <https://doi.org/10.1038/nchembio.957>

Caryophyllene Supports Osteoblast Function

1. Shan, J., Chen, L., & Lu, K. (2016). Protective effects of trans-caryophyllene on maintaining osteoblast function. *IUBMB Life*, 69(1), 22-29. doi:10.1002/iub.1584
2. Marieb, E. N., Hoehn, K., & Hutchinson, M. (2013). *Human anatomy & physiology*. San Francisco, CA: Pearson Education/Benjamin Cummings.

doTERRA Bergamot Study

1. Chang K and Shen W. Aromatherapy benefits autonomic nervous system regulation for elementary school faculty in Taiwan. *Evid.-Based Complement. Altern. Med. ECAM.* 2011;2011:946537.
2. Ni C, et al .The Anxiolytic Effect of Aromatherapy on Patients Awaiting Ambulatory Surgery: A Randomized Controlled Trial. *Evid. Based Complement. Alternat. Med.* 2013;2013:1–5.
3. Watanabe E, et al. Mood enhancement by bergamot (*Citrus bergamia* (Risso) Wright & Arn.) volatile oil vapor with regards to personality and lifestyle related changes in salivary cortisol levels: A randomized cross-over trial. *Planta Med.* 2013;79(13).
4. Watanabe E, et al. Effects of bergamot (*Citrus bergamia* (Risso) Wright & Arn.) essential oil aromatherapy on mood states, parasympathetic nervous system activity, and salivary cortisol levels in 41 healthy females. *Forsch. KomplementärmedizinResearch Complement. Med.* 2015;22(1):43–49.
5. Han X, Gibson J, eggett D, and Parker T. Bergamot (*Citrus bergamia*) essential oil inhalation improves positives feelings in the waiting room of a mental health treatment center: A pilot study. *Phytotherapy research.* 2017. DOI: 10.1002/ptr. 5806.

Linalyl Acetate

1. Igarashi T. Physical and psychologic effects of aromatherapy inhalation on pregnant women: a randomized controlled trial. *Journal of Alternative and Complementary Medicine.* 2013;19(10):805-810.
2. Peana A, et al. Anti-inflammatory activity of linalool and linalyl acetate constituents of essential oils. *Phytomedicine*

- Int. J. Phytother. Phytopharm. 2002;9(8):721–726.
3. Barocelli E. Antinociceptive and gastroprotective effects of inhaled and orally administered *Lavandula hybrida* Reverchon Grosso essential oil. Life Sci. 2004;76(2):213–223.
 4. Tadtong S, et al. Antimicrobial activity of blended essential oil preparation. Nat. Prod. Commun. 2012;7(10):1401–1404.

Linalool and GABA Receptors

Milanos S, Elsharif SA, Janzen D, Buettner A, Villmann C. Metabolic Products of Linalool and Modulation of GABA_A Receptors. Front Chem. 2017 Jun 21;5:46. doi: 10.3389/fchem.2017.00046. eCollection 2017.

doTERRA Clove Study

Han et al. 2017. Anti-inflammatory activity of clove (*Eugenia caryophyllata*) essential oil in human dermal fibroblasts. Pharmaceutical Biology, 55(1), 1619–1622. <https://doi.org/10.1080/13880209.2017.1314513>.

Neurologic Health and Cinnamaldehyde

Bae WY, Choi JS, Jeong JW. The Neuroprotective Effects of Cinnamic Aldehyde in an MPTP Mouse Model of Parkinson's Disease. Int J Mol Sci. 2018;19(2). pii: E551. doi: 10.3390/ijms19020551.

Plant Enzymes Synthesize Essential Oil Constituents

Filipe A, Cardoso JCR, Miguel G et al. Molecular cloning and functional characterization of a monoterpene synthase isolated from the aromatic wild shrub *Thymus albicans*. J Plant Physiol. 2017 Jul 21;218:35-44. doi: 10.1016/j.jplph.2017.07.013.

Menthol

1. Kamatou G, et al. Menthol: a simple monoterpenone with remarkable biological properties. *Phytochemistry*. 2013;96:15–25.
2. Yosipovitch G, et al. Effect of topically applied menthol on thermal, pain and itch sensations and biophysical properties of the skin. *Arch. Dermatol. Res.* 1996;288(5-6):245–248.
3. Samber N, et al. Synergistic anti-candidal activity and mode of action of *Mentha piperita* essential oil and its major components. *Pharm. Biol.* 2015;53(10):1496–1504.
4. A. M. Sabzghabaee A, et al. Role of menthol in treatment of candidal napkin dermatitis. *World J. Pediatr. WJP*. 2011;7(2):167–170.
5. Eccles R. and Jones S. The effect of menthol on nasal resistance to air flow. *J. Laryngol. Otol.* 1983;97(8):705–709.
6. Eccles R, et al. The effects of menthol isomers on nasal sensation of airflow. *Clin. Otolaryngol. Allied Sci.* 1988;13(1): 25–29.
7. Eccles R, et al. The effects of oral administration of (-)-menthol on nasal resistance to airflow and nasal sensation of airflow in subjects suffering from nasal congestion associated with the common cold. *J. Pharm. Pharmacol.* 1990;42(9):652–654.
8. Raut J, et al. Terpenoids of plant origin inhibit morphogenesis, adhesion, and biofilm formation by *Candida albicans*. *Biofouling*. 2013;29(1): 87–96.
9. Schelz Z, et al. Antimicrobial and antiplasmid activities of essential oils. *Fitoterapia*. 2006;77(4):279–285.
10. Ashoor A, et al. Menthol inhibits 5-HT₃ receptor-mediated currents. *J. Pharmacol. Exp. Ther.* 2013;347(2):398–409.
11. Wang Y, et al. Menthol inhibits the proliferation and motility of prostate cancer DU145 cells. *Pathol. Oncol. Res. POR*. 2012;18(4):903–910.
12. Russin W, et al. Inhibition of rat mammary carcinogenesis by

- monoterpenoids. *Carcinogenesis*. 1989;10(11):2161–2164.
- 13. Charles C, et al. Early benefits with daily rinsing on gingival health improvements with an essential oil mouthrinse--post-hoc analysis of 5 clinical trials. *J. Dent. Hyg. JDH Am. Dent. Hyg. Assoc.* 2014;88(1): 40–50.
 - 14. Kumar P, et al. Biocontrol potential of essential oil monoterpenes against housefly, *Musca domestica* (Diptera: Muscidae)," *Ecotoxicol. Environ. Saf.* 2014;100:1–6.

Thymoquinone Interacts with DNA

- 1. Sharpless NE & DePinho RA. Telomeres, stem cells, senescence, and cancer. *J Clin Invest.* 2004 Jan 15; 113(2): 160–168. doi: 10.1172/JCI200420761.
- 2. Maria A. Blasco. Telomeres and human disease: ageing, cancer and beyond. *Nature Reviews Genetics* 6, 611-622 (August 2005). doi:10.1038/nrg1656.
- 3. Salem AA, El Haty IA, Abdou IM et al. Interaction of human telomeric G-quadruplex DNA with thymoquinone: a possible mechanism for thymoquinone anticancer effect. *Biochim Biophys Acta.* 2015 Feb;1850(2):329-42. doi: 10.1016/j.bbagen.2014.10.018. Epub 2014 Oct 24.
- 4. Huiqi Li, Karin Engström, Marie Vahter, Karin Broberg. Arsenic Exposure through Drinking Water Is Associated with Longer Telomeres in Peripheral Blood. *Chem Res Toxicol.* 2012 Nov 19; 25(11): 2333–2339. Published online 2012 Aug 23. doi: 10.1021/tx300222t
- 5. Shin JY, Choi YY, Jeon HS, Hwang JH, Kim SA, Kang JH, Chang YS, Jacobs DR Jr, Park JY, Lee DH. Low-dose persistent organic pollutants increased telomere length in peripheral leukocytes of healthy Koreans. *Mutagenesis.* 2010 Sep;25(5):511-6. doi: 10.1093/mutage/geq035. Epub 2010 Jul 8.

doTERRA Rosemary and Wild Orange Study

Han et al. (2017). Essential oils diversely modulate genome-wide gene expression in human dermal fibroblasts. Cogent Medicine, 4(1), 1307591. <https://doi.org/10.1080/2331205X.2017.1307591>

doTERRA Juniper Berry Study

1. Höferl, M., Stoilova, I., Schmidt, E., Wanner, J., Jirovetz, L., Trifonova, D., . . . Krastanov, A. (2014). Chemical Composition and Antioxidant Properties of Juniper Berry (*Juniperus communis* L.) Essential Oil. Action of the Essential Oil on the Antioxidant Protection of *Saccharomyces cerevisiae* Model Organism. *Antioxidants*, 3(1), 81-98. doi:10.3390/antiox3010081
2. Han et. al. (2017). Lemongrass (*Cymbopogon flexuosus*) essential oil demonstrated anti-inflammatory effect in pre-inflamed human dermal fibroblasts. *Biochimie Open*, 4, 107-111. doi:10.1016/j.biopen.2017.03.004
3. Ward, S. (2012). Faculty of 1000 evaluation for A selective inhibitor reveals PI3K γ dependence of TH17 cell differentiation. F1000 - Post-publication peer review of the biomedical literature.
4. Berg, E. L., Yang, J., Melrose, J., Nguyen, D., Privat, S., Rosler, E., . . . Ekins, S. (2010). Chemical target and pathway toxicity mechanisms defined in primary human cell systems. *Journal of Pharmacological and Toxicological Methods*, 61(1), 3-15

doTERRA Vetiver Study

1. Han et al. (2017). Biological activity of vetiver (*Vetiveria zizanioides*) essential oil in human dermal fibroblasts. Cogent Medicine, 4(1).
2. Ward, S. (2012). Faculty of 1000 evaluation for A selective inhibitor reveals PI3K γ dependence of TH17 cell

differentiation. F1000 - Post-publication peer review of the biomedical literature.

3. Berg, E. L., Yang, J., Melrose, J., Nguyen, D., Privat, S., Rosler, E., & Ekins, S. (2010). Chemical target and pathway toxicity mechanisms defined in primary human cell systems. *Journal of Pharmacological and Toxicological Methods*, 61(1), 3-15
4. Herum, K., Lunde, I., Mcculloch, A., & Christensen, G. (2017). The Soft- and Hard-Heartedness of Cardiac Fibroblasts: Mechanotransduction Signaling Pathways in Fibrosis of the Heart. *Journal of Clinical Medicine*, 6(6), 53. doi:10.3390/jcm6050053

doTERRA Oregano Oil Study

1. Han, X., & Parker, T. L. (2017). Biological activity of vetiver (*Vetiveria zizanioides*) essential oil in human dermal fibroblasts. *Cogent Medicine*, 4(1).
2. R.B. Bostancıoglu, M. Ku“rkçu”oglu, K.H.C. Bas,er, A.T. Koparal, Assessment of anti-angiogenic and anti-tumoral potentials of *Origanum onites* L. essential oil, *Food Chem. Toxicol. Int. J. Publ. Br. Ind. Biol. Res. Assoc.* 50 (2012) 2002e2008, <http://dx.doi.org/10.1016/j.fct.2012.03.074>.
3. W.Z. Liang, C.H. Lu, Carvacrol-induced [Ca²⁺]i rise and apoptosis in human glioblastoma cells, *Life Sci.* 90 (2012) 703e711, <http://dx.doi.org/10.1016/j.lfs.2012.03.027>.

Drought and Essential Oil Production in Sage

Radwan A, Kleinwächter M, Selmar D. Impact of drought stress on specialised metabolism: Biosynthesis and the expression of monoterpenes synthases in sage (*Salvia officinalis*). *Phytochemistry*. 2017. 24;141:20-26. doi: 10.1016/j.phytochem. 2017.05.005.

Caterpillars Use Essential Oil Constituents

1. Burger, B.V., Munro, Z., Roth, M., Spies, H.S.C., Truter, V. and Greetsema, H. 1985. Constituents of osmeterial secretion of prefinal instar larvae of citrus swallowtail, *Papilio demodocus* (Esper) (Lepidoptera: Papilionidae). *J. Chem. Ecol.* 11 (8): 1093-1114.
2. Chattopadhyay, J. 2011. The structure and defensive efficacy of glandular secretion of the larval osmeterium in *Graphium agamemnon agamemnon* Linnaeus, 1758 (Lepidoptera: Papilionidae).
3. Damman, H. 1986. The osmeterial glands of the swallowtail butterfly *Eurytides Marcellus* as a defense against natural enemies. *Ecol.Entomol.* 11: 261-265.
4. Chow, Y.S. and Tsai, R.S. 1989. Protective chemicals in caterpillar survival. *Experientia (Basel)* 45 (4): 390-392.
5. Honda, K. 1981. Larval osmeterial secretions of the swallowtails. *J. Chern. Ecol.* 7: 1089-1113.
6. Zakharov EV, Caterino MS, Sperling FA. Molecular phylogeny, historical biogeography, and divergence time estimates for swallowtail butterflies of the genus *Papilio* (Lepidoptera: Papilionidae). *Syst Biol.* 2004 Apr;53(2): 193-215.

Santalol

1. M. Sharma et al., "Suppression of Lipopolysaccharide-stimulated Cytokine/Chemokine Production in Skin Cells by Sandalwood Oils and Purified α-santalol and β-santalol," *Phytother. Res.*, vol. 28, no. 6, pp. 925–932, Jun. 2014.
2. B. L. Arasada, A. Bommareddy, X. Zhang, K. Bremmon, and C. Dwivedi, "Effects of alpha-santalol on proapoptotic caspases and p53 expression in UVB irradiated mouse skin," *Anticancer Res.*, vol. 28, no. 1A, pp. 129–132, Feb. 2008.

3. T. Ochi, H. Shibata, T. Higuti, K. Kodama, T. Kusumi, and Y. Takaishi, “Anti-Helicobacter pylori compounds from *Santalum album*,” *J. Nat. Prod.*, vol. 68, no. 6, pp. 819–824, Jun. 2005.
4. E. Heuberger, T. Hongratanaworakit, and G. Buchbauer, “East Indian Sandalwood and alphasantalol odor increase physiological and self-rated arousal in humans,” *Planta Med.*, vol. 72, no. 9, pp. 792–800, Jul. 2006.

Chemistry of Douglas Fir Essential Oil

1. Guzmán-Gutiérrez, S. L., Bonilla-Jaime, H., Gómez-Cansino, R. & Reyes-Chilpa, R. Linalool and β -pinene exert their antidepressant-like activity through the monoaminergic pathway. *Life Sci.* 128, 24–29 (2015).
2. Bae, G.-S. et al. Protective effects of alpha-pinene in mice with cerulein-induced acute pancreatitis. *Life Sci.* 91, 866–871 (2012).
3. Kim, D.-S. et al. Alpha-Pinene Exhibits Anti-Inflammatory Activity Through the Suppression of MAPKs and the NF- κ B Pathway in Mouse Peritoneal Macrophages. *Am. J. Chin. Med.* 43, 731–742 (2015).
4. Nam, S.-Y. et al. The therapeutic efficacy of α -pinene in an experimental mouse model of allergic rhinitis. *Int. Immunopharmacol.* 23, 273–282 (2014).
5. Matthys, H. et al. Efficacy and tolerability of myrtol standardized in acute bronchitis. A multi-centre, randomised, double-blind, placebo-controlled parallel group clinical trial vs. cefuroxime and ambroxol. *Arzneimittelforschung.* 50, 700–711 (2000).
6. Meister, R., Wittig, T., Beuscher, N. & de Mey, C. Efficacy and tolerability of myrtol standardized in long-term treatment of chronic bronchitis. A double-blind, placebo-controlled study. Study Group Investigators. *Arzneimittelforschung.* 49, 351–358 (1999).

7. Sengespeik, H. C., Zimmermann, T., Peiske, C. & de Mey, C. [Myrtol standardized in the treatment of acute and chronic respiratory infections in children. A multicenter post-marketing surveillance study]. *Arzneimittelforschung*. 48, 990–994 (1998).
8. Begrow, F., Böckenholt, C., Ehmen, M., Wittig, T. & Verspohl, E. J. Effect of myrtol standardized and other substances on the respiratory tract: ciliary beat frequency and mucociliary clearance as parameters. *Adv. Ther.* 29, 350–358 (2012).
9. Niccolini P, Pasotti V, Caliari W. New Pharmacological properties of delta-3-carene. Antibacterial and expectorant effects. *Boll Chim Farm*. 1964 Aug;103:598-608.
10. Borges, A., Lopez-Romero, J. C., Oliveira, D., Giaouris, E. & Simões, M. Prevention, removal and inactivation of *Escherichia coli* and *Staphylococcus aureus* biofilms using selected monoterpenes of essential oils. *J. Appl. Microbiol.* (2017). doi:10.1111/jam.13490
11. Valente, J. et al. Antifungal, antioxidant and anti-inflammatory activities of *Oenanthe crocata* L. essential oil. *Food Chem. Toxicol.* 62, 349–354 (2013).
12. Quiroga, P. R., Asensio, C. M. & Nepote, V. Antioxidant effects of the monoterpenes carvacrol, thymol and sabinene hydrate on chemical and sensory stability of roasted sunflower seeds. *J. Sci. Food Agric.* 95, 471–479 (2015).
13. Ito K, Ito M. The sedative effect of inhaled terpinolene in mice and its structure-activity relationships. *J Nat Med*. 2013 Oct;67(4):833-7. doi: 10.1007/s11418-012-0732-1.

doTERRA Lifelong Vitality Pack® Study

Han et al. 2017. Evaluation of the health effects of a multivitamin mineral herbal essential oil-infused supplement: a pilot trial. *Journal of Dietary Supplements*. doi: 10.1080/19390211.2017.1331943

doTERRA Serenity Restful Complex Clinical Trial

1. von Ruesten A, Weikert C, and Boeing H. Association of sleep deprivation with chronic diseases in the European prospective investigation into cancer and nutrition (EPIC)-Potsdam study. *PLOS One*. 2012. doi.org/10.1371/journal.pone.0030972
2. Al Khatib H, harding S, Darzi J, and Pot G. The effects of partial sleep deprivation on energy balance: a systematic review and meta-analysis. *European Journal of Clinical Nutrition*. 2017;71(5):614-624.
3. Ferrie J, et al. Sleep epidemiology--a rapidly growing field. *International Journal of Epidemiology*.
4. Stevens N, Dorsett J, DaBell A, Egget D, Han X, Parker T. Subjective assessment of the effects of an herbal supplement containing lavender essential oil on sleep quality: A randomized, double-blind, placebo-controlled crossover study. *Cogent Medicine*. 2017. doi.org/10.1080/2331205X.2017.1380871.

Eucalyptol

1. Worth H, et al. Concomitant therapy with Cineole (Eucalyptole) reduces exacerbations in COPD: a placebo-controlled double-blind trial. *Respir. Res.* 2009;10:69.
2. Worth H. and Dethlefsen U. Patients with asthma benefit from concomitant therapy with cineole: a placebo-controlled, double-blind trial. *J. Asthma Off. J. Assoc. Care Asthma*. 2012;49(8): 849–853.
3. Juergens U, et al. Antiinflammatory activity of 1.8-cineol (eucalyptol) in bronchial asthma: a double-blind placebo controlled trial. *Respir. Med.* 2003;97(3):250–256.
4. Kehrl W, et al. Therapy for acute nonpurulent rhinosinusitis with cineole: results of a double-blind, randomized, placebo-

- controlled trial. *The Laryngoscope*. 2004;114(4):738–742.
5. Mimica-Dukić N, et al. Antimicrobial and antioxidant activities of three *Mentha* species essential oils. *Planta Med*. 2003;69(5):413–419.
 6. Yu D, et al. Antifungal modes of action of tea tree oil and its two characteristic components against *Botrytis cinerea*. *J Appl Microbiol*. 2015;119(5):1253–1262.
 7. Kumar P, et al. Biocontrol potential of essential oil monoterpenes against housefly, *Musca domestica* (Diptera: Muscidae). *Ecotoxicol Environ Saf*. 2014;100:1–6.
 8. Toloza A, et al. Fumigant and repellent properties of essential oils and component compounds against permethrin-resistant *Pediculus humanus capititis* (Anoplura: Pediculidae) from Argentina. *J Med Entomol*. 2006;43(5): 889–895.

doTERRA Anchor Chemistry

1. S. Dayawansa, K. Umeno, H. Takakura, E. Hori, E. Tabuchi, Y. Nagashima, H. Oosu, Y. Yada, T. Suzuki, T. Ono, and H. Nishijo, “Autonomic responses during inhalation of natural fragrance of ‘Cedrol’ in humans,” *Auton. Neurosci.*, vol. 108, no. 1–2, pp. 79–86, Oct. 2003.
2. Y. Yada, H. Sadachi, Y. Nagashima, and T. Suzuki, “Overseas survey of the effect of cedrol on the autonomic nervous system in three countries,” *J. Physiol. Anthropol.*, vol. 26, no. 3, pp. 349–354, 2007.
3. Milanos S, Elsharif SA, Janzen D et al. Metabolic Products of Linalool and Modulation of GABAA receptors. *Front Chem*. 2017 Jun 21;5:46. doi: 10.3389/fchem.2017.00046. eCollection 2017.
4. D. Nord and J. Belew, “Effectiveness of the essential oils lavender and ginger in promoting children’s comfort in a

perianesthesia setting," *J. Perianesthesia Nurs.* Off. J. Am. Soc. PeriAnesthesia Nurses Am. Soc. PeriAnesthesia Nurses, vol. 24, no. 5, pp. 307–312, Oct. 2009.

5. R. McCaffrey, D. J. Thomas, and A. O. Kinzelman, "The effects of lavender and rosemary essential oils on test-taking anxiety among graduate nursing students," *Holist. Nurs. Pract.*, vol. 23, no. 2, pp. 88–93, Apr. 2009.
6. Zhu R, Liu H, Liu C et al. Cinnamaldehyde in diabetes: A review of pharmacology, pharmacokinetics and safety. *Pharmacol Res.* 2017 Aug;122:78-89. doi: 10.1016/j.phrs.2017.05.019.

doTERRA Align Chemistry

1. Soto-Vásquez MR, Alvarado-García PA. Aromatherapy with two essential oils from Satureja genre and mindfulness meditation to reduce anxiety in humans. *J Tradit Complement Med.* 2016;7(1):121-125.
2. D. P. de Sousa, P. de Almeida Soares Hocayen, L. N. Andrade, and R. Andreatini, "A Systematic Review of the Anxiolytic-Like Effects of Essential Oils in Animal Models," *Mol. Basel Switz.*, vol. 20, no. 10, pp. 18620–18660, 2015.
3. L. Rombolà, M. T. Corasaniti, D. Rotiroti, C. Tassorelli, S. Sakurada, G. Bagetta, and L. A. Morrone, "Effects of systemic administration of the essential oil of bergamot (BEO) on gross behaviour and EEG power spectra recorded from the rat hippocampus and cerebral cortex," *Funct. Neurol.*, vol. 24, no. 2, pp. 107–112, Jun. 2009.
4. D. Amantea, V. Fratto, S. Maida, D. Rotiroti, S. Ragusa, G. Nappi, G. Bagetta, and M. T. Corasaniti, "Chapter 27 Prevention of Glutamate Accumulation and Upregulation of Phospho-Akt may Account for Neuroprotection Afforded by Bergamot Essential Oil against Brain Injury Induced by Focal Cerebral Ischemia in Rat," in *International Review of*

- Neurobiology, vol. 85, Elsevier, 2009, pp. 389–405.
5. T. Sakurada, H. Mizoguchi, H. Kuwahata, S. Katsuyama, T. Komatsu, L. A. Morrone, M. T. Corasaniti, G. Bagetta, and S. Sakurada, “Intraplantar injection of bergamot essential oil induces peripheral antinociception mediated by opioid mechanism,” *Pharmacol. Biochem. Behav.*, vol. 97, no. 3, pp. 436–443, Jan. 2011.
 6. M. T. Corasaniti, J. Maiuolo, S. Maida, V. Fratto, M. Navarra, R. Russo, D. Amantea, L. A. Morrone, and G. Bagetta, “Cell signaling pathways in the mechanisms of neuroprotection afforded by bergamot essential oil against NMDA-induced cell death in vitro,” *Br. J. Pharmacol.*, vol. 151, no. 4, pp. 518–529, Jun. 2007.
 7. H. Kuwahata, T. Komatsu, S. Katsuyama, M. T. Corasaniti, G. Bagetta, S. Sakurada, T. Sakurada, and K. Takahama, “Peripherally injected linalool and bergamot essential oil attenuate mechanical allodynia via inhibiting spinal ERK phosphorylation,” *Pharmacol. Biochem. Behav.*, vol. 103, no. 4, pp. 735–741, Feb. 2013.
 8. R. Tundis, M. R. Loizzo, M. Bonesi, F. Menichini, V. Mastellone, C. Colica, and F. Menichini, “Comparative study on the antioxidant capacity and cholinesterase inhibitory activity of Citrus aurantifolia Swingle, C. aurantium L., and C. bergamia Risso and Poit. peel essential oils,” *J. Food Sci.*, vol. 77, no. 1, pp. H40-46, Jan. 2012.
 9. S. Darvesh, D. A. Hopkins, and C. Geula, “Neurobiology of butyrylcholinesterase,” *Nat. Rev. Neurosci.*, vol. 4, no. 2, pp. 131–138, Feb. 2003.
 10. L. A. Morrone, L. Rombolà, C. Pelle, M. T. Corasaniti, S. Zappettini, P. Paudice, G. Bonanno, and G. Bagetta, “The essential oil of bergamot enhances the levels of amino acid neurotransmitters in the hippocampus of rat: Implication of monoterpane hydrocarbons,” *Pharmacol. Res.*, vol. 55, no. 4, pp. 255–262, Apr. 2007.

11. K.-M. Chang and C.-W. Shen, "Aromatherapy benefits autonomic nervous system regulation for elementary school faculty in taiwan," *Evid.-Based Complement. Altern. Med. ECAM*, vol. 2011, p. 946537, 2011.
 12. C.-H. Ni, W.-H. Hou, C.-C. Kao, M.-L. Chang, L.-F. Yu, C.-C. Wu, and C. Chen, "The Anxiolytic Effect of Aromatherapy on Patients Awaiting Ambulatory Surgery: A Randomized Controlled Trial," *Evid. Based Complement. Alternat. Med.*, vol. 2013, pp. 1–5, 2013.
 13. E. Watanabe, K. Kuchta, H. Rauwald, T. Kamei, and J. Imanishi, "Mood enhancement by bergamot (*Citrus bergamia* (Risso) Wright & Arn.) volatile oil vapor with regards to personality and lifestyle related changes in salivary cortisol levels: A randomized cross-over trial," *Planta Med.*, vol. 79, no. 13, Aug. 2013.
 14. K. Lemon, "An assessment of treating depression and anxiety with aromatherapy," *Int. J. Aromather.*, vol. 14, no. 2, pp. 63–69, 2004.
 15. S.-H. Liu, T.-H. Lin, and K.-M. Chang, "The Physical Effects of Aromatherapy in Alleviating Work-Related Stress on Elementary School Teachers in Taiwan," *Evid. Based Complement. Alternat. Med.*, vol. 2013, pp. 1–7, 2013.
 16. E. Watanabe, K. Kuchta, M. Kimura, H. W. Rauwald, T. Kamei, and J. Imanishi, "Effects of bergamot (*Citrus bergamia* (Risso) Wright & Arn.) essential oil aromatherapy on mood states,
 17. Muhammad Nadeem, Faqir Muhammad Anjum, Muhammad Issa Khan, Saima Tehseen, Ahmed El - Ghorab, and Javed Iqbal Sultan, "Nutritional and medicinal aspects of coriander (*Coriandrum sativum* L.)," *Br. Food J.*, vol. 115, no. 5, pp. 743–755, May 2013.
18. "Plant Care Guides :: National Gardening Association." [Online]. Available: <http://www.garden.org/>

plantguide/?q=show&id=3362. [Accessed: 17-Jul-2015].

19. O. Cioanca, L. Hritcu, M. Mihasan, A. Trifan, and M. Hancianu, "Inhalation of coriander volatile oil increased anxiolytic-antidepressant-like behaviors and decreased oxidative status in beta-amyloid (1-42) rat model of Alzheimer's disease," *Physiol. Behav.*, vol. 131, pp. 68–74, May 2014.
20. I.-H. Kim, C. Kim, K. Seong, M.-H. Hur, H. M. Lim, and M. S. Lee, "Essential Oil Inhalation on Blood Pressure and Salivary Cortisol Levels in Prehypertensive and Hypertensive Subjects," *Evid.-Based Complement. Altern. Med. ECAM*, vol. 2012, 2012.
21. M.-C. Ou, Y.-F. Lee, C.-C. Li, and S.-K. Wu, "The effectiveness of essential oils for patients with neck pain: a randomized controlled study," *J. Altern. Complement. Med. N. Y. N*, vol. 20, no. 10, pp. 771–779, Oct. 2014.
22. T. Umezawa, "Evaluation of the Effects of Plant-derived Essential Oils on Central Nervous System Function Using Discrete Shuttle-type Conditioned Avoidance Response in Mice: ESSENTIAL OILS AND AVOIDANCE RESPONSE," *Phytother. Res.*, vol. 26, no. 6, pp. 884–891, Jun. 2012.
23. K. Kuroda, N. Inoue, Y. Ito, K. Kubota, A. Sugimoto, T. Kakuda, and T. Fushiki, "Sedative effects of the jasmine tea odor and (R)-(-)-linalool, one of its major odor components, on autonomic nerve activity and mood states," *Eur. J. Appl. Physiol.*, vol. 95, no. 2–3, pp. 107–114, Oct. 2005.

1. Goepfert M, Liebl P, Herth N et al. Aroma oil therapy in palliative care: a pilot study with physiological parameters in conscious as well as unconscious patients. *J Cancer Res Clin Oncol.* (2017) Jun 20. doi: 10.1007/s00432-017-2460-0
2. Heuberger E, Hongratanaorakit T, Böhm C, Weber R, Buchbauer G. Effects of chiral fragrances on human autonomic nervous system parameters and self-evaluation. *Chem Senses.* 2001 Mar;26(3):281-92.
3. Yang H, Woo J, Pae AN et al. α-Pinene, a Major Constituent of Pine Tree Oils, Enhances Non-Rapid Eye Movement Sleep in Mice through GABAA-benzodiazepine Receptors. *Mol Pharmacol.* 2016 Nov;90(5):530-539. Epub 2016 Aug 29.
4. Matsubara E, Fukagawa M, Okamoto T et al. (-)-Bornyl acetate induces autonomic relaxation and reduces arousal level after visual display terminal work without any influences of task performance in low-dose condition. *Biomed Res.* 2011 Apr;32(2):151-7
5. Matsubara E, Fukagawa M, Okamoto T et al. The essential oil of *Abies sibirica* (Pinaceae) reduces arousal levels after visual display terminal work. *Flavour Frag J.* 2011;26(3): 204-210.
6. Guzmán-Gutiérrez SL, Bonilla-Jaime H, Gómez-Cansino R et al. Linalool and β-pinene exert their antidepressant-like activity through the monoaminergic pathway. *Life Sci.* 2015 May 1;128:24-9. doi: 10.1016/j.lfs.2015.02.021.

Chemistry of Siberian Fir Oil

1. Boyd EM, Sheppard EP. Nutmeg Oil and Camphene as Inhaled Expectorants. *Arch Otolaryngol.* 1970;92(4): 372-378. doi:10.1001/archotol.1970.04310040060011
2. Kim SH, Lee SY, Hong CY et al. Whitening and antioxidant activities of bornyl acetate and nezukol fractionated from *Cryptomeria japonica* essential oil. *Int J Cosmet Sci.* 2013

- Oct;35(5):484-90. doi: 10.1111/ics.12069. Epub 2013 Jul 6.
3. Yang H, Woo J, Pae AN et al. α -Pinene, a Major Constituent of Pine Tree Oils, Enhances Non-Rapid Eye Movement Sleep in Mice through GABAA-benzodiazepine Receptors. Mol Pharmacol. 2016 Nov;90(5):530-539. Epub 2016 Aug 29.

Blue Tansy Essential Oil

1. Srivastava JK, Pandey M, Gupta S. Chamomile, a novel and selective COX-2 inhibitor with anti-inflammatory activity. Life Sci. 2009 Nov 4; 85(19-20): 663–669.
2. L. Ornano et al., “Chemopreventive and Antioxidant Activity of the Chamazulene-Rich Essential Oil Obtained from *Artemisia arborescens* L. Growing on the Isle of La Maddalena, Sardinia, Italy,” Chem. Biodivers., vol. 10, no. 8, pp. 1464–1474, Aug. 2013.
3. J. Valente et al., “Antifungal, antioxidant and anti-inflammatory activities of *Oenanthe crocata* L. essential oil,” Food Chem. Toxicol., vol. 62, pp. 349–354, Dec. 2013.
4. Rao VS, Menezes AM, Viana GS. Effect of myrcene on nociception in mice. J Pharm Pharmacol. 1990 Dec;42(12):877-8.
5. Hwang E, Ngo HTT, Park B, Seo SA, Yang JE, Yi TH. Myrcene, an Aromatic Volatile Compound, Ameliorates Human Skin Extrinsic Aging via Regulation of MMPs Production. Am J Chin Med. 2017;45(5):1113-1124. doi: 10.1142/S0192415X17500604. Epub 2017 Jun 28.

Endocannabinoids Explained

1. Leweke FM, Piomelli C, Pahlisch F, et al. Cannabidiol enhances anandamide signaling and alleviates psychotic symptoms of schizophrenia. *Translational Psychiatry* (2012) 2, e94; doi:10.1038/tp.2012.15
2. Pertwee RG. The diverse CB1 and CB2 receptor pharmacology of three plant cannabinoids: Δ9-tetrahydrocannabinol, cannabidiol and Δ9-tetrahydrocannabivarin. *Br J Pharmacol.* 2008 Jan; 153(2): 199–215.
3. A. Chicca et al., “Functionalization of β-caryophyllene generates novel polypharmacology in the endocannabinoid system,” *ACS Chem. Biol.*, vol. 9, no. 7, pp. 1499–1507, Jul. 2014.

Copaiba Essential Oil

1. A. G. da Silva et al., “Application of the essential oil from copaiba (*Copaifera langsdorffii* Desf.) for acne vulgaris: a double-blind, placebo-controlled clinical trial,” *Altern. Med. Rev. J. Clin. Ther.*, vol. 17, no. 1, pp. 69–75, Mar. 2012.
2. S. S. Dahham et al., “The Anticancer, Antioxidant and Antimicrobial Properties of the Sesquiterpene β-Caryophyllene from the Essential Oil of Aquilaria crassna,” *Mol. Basel Switz.*, vol. 20, no. 7, pp. 11808–11829, 2015.
3. B. Bayala et al., “Chemical Composition, Antioxidant, Anti-Inflammatory and Anti-Proliferative Activities of Essential Oils of Plants from Burkina Faso,” *PLoS ONE*, vol. 9, no. 3, p. e92122, Mar. 2014.
4. M. A. Abbas, M. O. Taha, M. A. Zihlif, and A. M. Disi, “β-Caryophyllene causes regression of endometrial implants in a rat model of endometriosis without affecting fertility,” *Eur. J. Pharmacol.*, vol. 702, no. 1–3, pp. 12–19, Feb. 2013.

5. M. I. Campos, W. Vieira, C. Campos, F. Aarestrup, and B. Aarestrup, “Atorvastatin and trans caryophyllene for the prevention of leukopenia in an experimental chemotherapy model in Wistar rats,” *Mol. Clin. Oncol.*, Apr. 2015.
6. D. Dias et al., “Copaiba Oil Suppresses Inflammatory Cytokines in Splenocytes of C57Bl/6 Mice Induced with Experimental Autoimmune Encephalomyelitis (EAE),” *Molecules*, vol. 19, no. 8, pp. 12814–12826, Aug. 2014.
7. C. VilanovaBr, S. RibeiroBr, R. MachadoBr, S. VieiraBr, S. debrLimab, and P. Martins, “Evaluation of oil-resin activity of *Copaifera* sp. on gastric emptying in *Rattus
novergicus*,” *Emir. J. Food Agric.*, vol. 23, no. 1, p. 394, 2013.
8. Y.-T. Tung, M.-T. Chua, S.-Y. Wang, and S.-T. Chang, “Anti-inflammation activities of essential oil and its constituents from indigenous cinnamon (*Cinnamomum osmophloeum*) twigs,” *Bioresour. Technol.*, vol. 99, no. 9, pp. 3908–3913, Jun. 2008.
9. M. J. Chavan, P. S. Wakte, and D. B. Shinde, “Analgesic and anti-inflammatory activity of Caryophyllene oxide from *Annona squamosa* L. bark,” *Phytomedicine Int. J. Phytother. Phytopharm.*, vol. 17, no. 2, pp. 149–151, Feb. 2010.
10. C. Ghelardini, N. Galeotti, L. Di Cesare Mannelli, G. Mazzanti, and A. Bartolini, “Local anaesthetic activity of beta-caryophyllene,” *Farm. Soc. Chim. Ital.* 1989, vol. 56, no. 5–7, pp. 387–389, Jul. 2001.
11. J. Y. Cho, H.-J. Chang, S.-K. Lee, H.-J. Kim, J.-K. Hwang, and H. S. Chun, “Amelioration of dextran sulfate sodium-induced colitis in mice by oral administration of beta-caryophyllene, a sesquiterpene,” *Life Sci.*, vol. 80, no. 10, pp. 932–939, Feb. 2007.
12. F. A. Pieri, M. C. M. Mussi, J. E. Fiorini, M. A. S. Moreira, and J. M. Schneedorf, “Bacteriostatic effect of copaiba oil

- (*Copaifera officinalis*) against *Streptococcus mutans*,” *Braz. Dent. J.*, vol. 23, no. 1, pp. 36–38, 2012.
- 13. A. O. Santos, T. Ueda-Nakamura, B. P. Dias Filho, V. F. Veiga Junior, A. C. Pinto, and C. V. Nakamura, “Effect of Brazilian copaiba oils on *Leishmania amazonensis*,” *J. Ethnopharmacol.*, vol. 120, no. 2, pp. 204–208, Nov. 2008.
 - 14. E. S. Otaguiri et al., “Antibacterial combination of oleoresin from *Copaifera multijuga* Hayne and biogenic silver nanoparticles towards *Streptococcus agalactiae*,” *Curr. Pharm. Biotechnol.*, Dec. 2016.
 - 15. C. A. C. G. Simões, N. C. de O. Conde, G. N. Venâncio, P. S. L. L. Milério, M. F. C. L. Bandeira, and V. F. da Veiga Júnior, “Antibacterial Activity of Copaiba Oil Gel on Dental Biofilm,” *Open Dent. J.*, vol. 10, pp. 188–195, May 2016.
 - 16. L. a. F. Paiva et al., “Protective effect of *Copaifera langsdorffii* oleo-resin against acetic acid-induced colitis in rats,” *J. Ethnopharmacol.*, vol. 93, no. 1, pp. 51–56, Jul. 2004.
 - 17. A. Guimarães-Santos et al., “Copaiba Oil-Resin Treatment Is Neuroprotective and Reduces Neutrophil Recruitment and Microglia Activation after Motor Cortex Excitotoxic Injury,” *Evid.-Based Complement. Altern. Med. ECAM*, vol. 2012, 2012.
 - 18. C. Kobayashi et al., “Pharmacological evaluation of *Copaifera multijuga* oil in rats,” *Pharm. Biol.*, vol. 49, no. 3, pp. 306–313, Mar. 2011.
 - 19. M. Curio, H. Jacone, J. Perrut, A. C. Pinto, V. F. V. Filho, and R. C. B. Silva, “Acute effect of *Copaifera reticulata* Ducke copaiba oil in rats tested in the elevated plus-maze: an ethological analysis,” *J. Pharm. Pharmacol.*, vol. 61, no. 8, pp. 1105–1110, Aug. 2009.
 - 20. N. de M. Gomes, C. M. de Rezende, S. P. Fontes, M. E. Matheus, A. da C. Pinto, and P. D. Fernandes, “Characterization of the antinociceptive and anti-

- inflammatory activities of fractions obtained from *Copaifera multijuga* Hayne,” *J. Ethnopharmacol.*, vol. 128, no. 1, pp. 177–183, Mar. 2010.
- 21. N. M. Gomes, C. M. Rezende, S. P. Fontes, M. E. Matheus, and P. D. Fernandes, “Antinociceptive activity of Amazonian *Copaiba* oils,” *J. Ethnopharmacol.*, vol. 109, no. 3, pp. 486–492, Feb. 2007.
 - 22. V. F. Veiga Junior, E. C. Rosas, M. V. Carvalho, M. G. M. O. Henriques, and A. C. Pinto, “Chemical composition and anti-inflammatory activity of copaiba oils from *Copaifera cearensis* Huber ex Ducke, *Copaifera reticulata* Ducke and *Copaifera multijuga* Hayne--a comparative study,” *J. Ethnopharmacol.*, vol. 112, no. 2, pp. 248–254, Jun. 2007.
 - 23. M. F. C. L. Bandeira et al., “Dentin Cleaning Ability of an Amazon Bioactive: Evaluation by Scanning Electron Microscopy,” *Open Dent. J.*, vol. 10, pp. 182–187, May 2016.
 - 24. M. A. Dias-da-Silva, A. C. Pereira, M. C. Marin, and M. A. Salgado, “The influence of topical and systemic administration of copaiba oil on the alveolar wound healing after tooth extraction in rats,” *J. Clin. Exp. Dent.*, vol. 5, no. 4, pp. e169–e173, Oct. 2013.
 - 25. P. L. Tobouti et al., “Influence of melaleuca and copaiba oils on *Candida albicans* adhesion,” *Gerodontology*, p. n/a-n/a, Nov. 2014.
 - 26. J. Nogueira Neto et al., “Changes in the volume and histology of endometriosis foci in rats treated with copaiba oil (*Copaiferalangsdorffii*),” *Acta Cir. Bras.*, vol. 26, pp. 20–24, 2011.
 - 27. A. O. dos Santos et al., “*Leishmania amazonensis*: Effects of oral treatment with copaiba oil in mice,” *Exp. Parasitol.*, vol. 129, no. 2, pp. 145–151, Oct. 2011.
 - 28. A. O. dos Santos, T. Ueda-Nakamura, B. P. Dias Filho, V. F. da Veiga Junior, and C. V. Nakamura, “Copaiba Oil: An Alternative to Development of New Drugs against

- Leishmaniasis," Evid. Based Complement. Alternat. Med., vol. 2012, pp. 1–7, 2012.
29. L. R. M. Estevão, J. P. de Medeiros, L. Baratella-Evêncio, R. S. Simões, F. de S. Mendonça, and J. Evêncio-Neto, "Effects of the topical administration of copaiba oil ointment (*Copaifera langsdorffii*) in skin flaps viability of rats," *Acta Cir. Bras.*, vol. 28, no. 12, pp. 863–869, 2013.
30. L. Garcia et al., "Biocompatibility assessment of pastes containing Copaiba oilresin, propolis, and calcium hydroxide in the subcutaneous tissue of rats," *J. Conserv. Dent. JCD*, vol. 14, no. 2, pp. 108–112, 2011.
31. A. G. Guimarães et al., "Bioassay-guided evaluation of antioxidant and antinociceptive activities of carvacrol," *Basic Clin. Pharmacol. Toxicol.*, vol. 107, no. 6, pp. 949–957, Dec. 2010.
32. L. G. Lucca et al., "Determination of β -caryophyllene skin permeation/retention from crude copaiba oil (*Copaifera multijuga* Hayne) and respective oil-based nanoemulsion using a novel HS-GC/MS method," *J. Pharm. Biomed. Anal.*, vol. 104, pp. 144–148, Feb. 2015.
33. G. Svetlichny et al., "Solid lipid nanoparticles containing copaiba oil and allantoin: development and role of nanoencapsulation on the antifungal activity," *Pharm.*, vol. 70, no. 3, pp. 155–164, Mar. 2015.

Beta-Caryophyllene

1. Mackie K. Understanding cannabinoid psychoactivity with mouse genetic models. *PLOS Biology*. 2007. doi.org/10.1371/journal.pbio.0050280
2. Basu S. and Dittel B. Unraveling the complexities of the cannabinoid receptor 2 (CB2) immune regulation in health

- and disease. Immunologic Research. 2015;51(1):26-38.
3. Toguri j, et al. Anti-inflammatory effects of cannabinoid CB2 receptor activation in endotoxin-induced uveitis. British Journal of Pharmacology. 2014;171(6):1448-1461.
 4. Dhopeshwarker A. and Mackie K. CB2 cannabinoid receptors as a therapeutic agent – what does the future hold? Molecular Pharmacology. 2014;86(4):430-437.
 5. Fidyt K, et al. β -caryophyllene and β -caryophyllene oxide—natural compounds of anticancer and analgesic properties. Cancer Medicine. 2016;5(10):3007-3017.

doTERRA Cardamom Study

Han et al. 2017. Cardamom (*Elettaria cardamomum*) essential oil significantly inhibits vascular cell adhesion molecule 1 and impacts genome-wide gene expression in human dermal fibroblasts. Cogent Medicine, 4(1), 1308066. <https://doi.org/10.1080/2331205X.2017.1308066>

doTERRA Melaleuca Study

Melaleuca (*Melaleuca alternifolia*) essential oil demonstrates tissue-remodeling and metabolism-modulating activities in human skin cells, Xuesheng Han & Tory L. Parker, Cogent Biology (2017), 3: 1318476.

doTERRA Arborvitae Study

Han, X., & Parker, T. L. (2017). *Arborvitae (Thuja plicata)* essential oil significantly inhibited critical inflammation- and tissue remodeling-related proteins and genes in human dermal fibroblasts. *Biochimie Open*, 4, 56–60. <https://doi.org/10.1016/j.biopen.2017.02.003>

Alpha-Pinene

1. Rivas da Silva A, et al. Biological activities of α -Pinene and β -Pinene enantiomers. *Mol. Basel Switz.* 2012; 17(6): 6305–6316.
2. Cavaleiro C, Salgueiro L, Gonçalves M, Hrimpenc K, Pinto J, Pinto E. Antifungal activity of the essential oil of Angelica major against Candida, Cryptococcus, Aspergillus and dermatophyte species. *J. Nat. Med.* 2015;69(2):241–248.
3. Kim D, et al. Alpha-Pinene Exhibits AntiInflammatory Activity through the Suppression of MAPKs and the NF- κ B Pathway in Mouse Peritoneal Macrophages. *Am. J. Chin. Med.* 2015; 43(4):731–742.
4. Li X, et al. α -Pinene, linalool, and 1-octanol contribute to the topical anti-inflammatory and analgesic activities of frankincense by inhibiting COX-2. *J. Ethnopharmacol.* Dec. 2015.
5. Zhou J, Tang F, Mao G, Bian R. Effect of alpha-Pinene on nuclear translocation of NF-kappa B in THP-1 cells. *Acta Pharmacol. Sin.* 2004;25(4):480–484.
6. Kusuhara M, et al. Fragrant environment with α -Pinene decreases tumor growth in mice. *Biomed. Res. Tokyo Jpn.* 2012;33(1):57–61.
7. Kim D, et al. Alpha-Pinene Exhibits Anti-Inflammatory Activity Through the Suppression of MAPKs and the NF- κ B Pathway in Mouse Peritoneal Macrophages. *Am. J. Chin.*

- Med. 2015;43(4): 731–742.
8. Zhou J, Tang F, Mao G, Bian R. Effect of alpha-Pinene on nuclear translocation of NF-kappa B in THP-1 cells. *Acta Pharmacol. Sin.* 2004;25(4):480–484.
 9. Matthys H, et al. Efficacy and tolerability of myrtol standardized in acute bronchitis. A multi-centre, randomised, double-blind, placebo-controlled parallel group clinical trial vs. cefuroxime and ambroxol. *Arzneimittelforschung*. 2000;50(8):pp. 700–711.
 10. Begrow F, et al. Effect of myrtol standardized and other substances on the respiratory tract: ciliary beat frequency and mucociliary clearance as parameters. *Adv. Ther.* 2012;29(4):350–358.
 11. Behrbohm H, Kaschke O, Sydow K. Effect of the phytogenic secretolytic drug Gelomyrtol forte on mucociliary clearance of the maxillary sinus. *Laryngorhinootologie*. 1995;74(12): 733–737.

doTERRA Frankincense Study

Han, X., Rodriguez, D., & Parker, T. L. (2017). Biological activities of frankincense essential oil in human dermal fibroblasts. *Biochimie Open*, 4, 31-35. doi:10.1016/j.biopen.2017.01.003

doTERRA Deep Blue® Study

1. Han, X., & Parker, T. L. (2017). Essential oils diversely modulate genome-wide gene expression in human dermal fibroblasts. *Cogent Medicine*. 4(1). doi:10.1080/2331205x.2017.1307591
2. Ward, S. (2012). Faculty of 1000 evaluation for A selective inhibitor reveals PI3K γ dependence of TH17 cell differentiation. F1000 - Post-publication peer review of the biomedical literature.

-
-
3. Berg, E. L., Yang, J., Melrose, J., Nguyen, D., Privat, S., Rosler, E., . . . Ekins, S. (2010). Chemical target and pathway toxicity mechanisms defined in primary human cell systems. *Journal of Pharmacological and Toxicological Methods*. 61(1), 3-15.

doTERRA Lemongrass Study

1. Han et. al. (2017). Lemongrass (*Cymbopogon flexuosus*) essential oil demonstrated anti-inflammatory effect in pre-inflamed human dermal fibroblasts. *Biochimie Open*. 4, 107-111. doi:10.1016/j.biopen.2017.03.004
2. Ward, S. (2012). Faculty of 1000 evaluation for A selective inhibitor reveals PI3Ky dependence of TH17 cell differentiation. F1000 - Post-publication peer review of the biomedical literature.
3. Berg, E. L., Yang, J., Melrose, J., Nguyen, D., Privat, S., Rosler, E., . . . Ekins, S. (2010). Chemical target and pathway toxicity mechanisms defined in primary human cell systems. *Journal of Pharmacological and Toxicological Methods*. 61(1), 3-15.

Dilution with Essential Oil Nanoparticles

Trinetta V, Morgan MT, Coupland JN, et al. Essential Oils Against Pathogen and Spoilage Microorganisms of Fruit Juices: Use of Versatile Antimicrobial Delivery Systems. *J Food Sci*. 2017;82(2): 471-476.

Aromatherapy and Meditation Combined to Reduce Stress

Soto-Vásquez MR, Alvarado-García PA. Aromatherapy with two essential oils from Satureja genre and mindfulness meditation to

reduce anxiety in humans. *J Tradit Complement Med.* 2016;7(1):121-125.

Kumquat

1. Choi H. Characteristic odor components of kumquat peel oil. *Journal of Agricultural and Food Chemistry.* 2005;53(5):1642-1647.
2. Nouri A and Shafaghatlonbar A. Chemical constituents and antioxidant activity of essential oil and organic extract from the peel and kernel parts of *Citrus japonica* Thunb. (kumquat) from Iran. *Natural Products Research.* 2016;30(9):1093-1097.
3. Russo E. Taming THC: Potential cannabis synergy and phytocannabinoid-terpenoid entourage effects. *British Journal of Pharmacology.* 2010;163:1344-1364.
4. Yang E, et al. Inhibitory effects of *Fortunella japonica* var. *margarita* and *Citrus sunki* essential oils on nitric oxide production and skin pathogens. *Acta Microbiol Immunol Hung.* 2010;57(1):15-27.
5. Wang, et al. Chemical composition and antimicrobial activity of the essential oil of kumquat peel. *International Journal of Molecular Science.* 2012;13:3382-3393.
6. Zhou J, Tang F, Mao G, Bian R. Effect of alpha-pinene on nuclear translocation of NF-kappa B in THP-1 cells. *Acta Pharmacol. Sin.* 2004;25(4):480–484.

Red Mandarin

1. Bourgou S, et al. Changes of peel essential oil composition of four Tunisian citrus during fruit maturation. *Scientific World Journal.* 2012. doi: 10.1100/2012/528593.
2. Barchiesi F, et al. In vitro susceptibility of dermatophytes to conventional and alternative antifungal agents. *Med.*

Mycol. 2009;47(3):321–326.

Sunny Citrus

1. M.r S, et al. The comparison of the efficacy of citrus fragrance and fluoxetine in the treatment of major depressive disorder. 2004;10(3):43–48.
2. Han X, Gibson J, Eggett D, and Parker T. Bergamot (*Citrus bergamia*) essential oil inhalation improves positive feelings in the waiting room of a mental health treatment center: a pilot study. *Phytotherapy Research*. 2017. DOI: 10.1002/ptr. 5806.
3. Moss M, et al. Modulation of cognitive performance and mood by aromas of peppermint and ylang-ylang. *Int. J. Neurosci.* 2008;118(1):59–77.
4. Goel N. and Lao R. Sleep changes vary by odor perception in young adults. *Biol. Psychol.*, 2006;71(3):341–349.
5. Umez T. Evaluation of the effects of plant-derived essential oils on central nervous system function using discrete shuttle-type conditioned avoidance response in mice. *Phytother. Res. PTR.* 2012; 26(6):884–891.
6. O'Bryan C, et al. Orange Essential Oils Antimicrobial Activities against *Salmonella* spp. *J. Food Sci.* 2008;73(6):M264–M267.
7. Muthaiyan A, et al. Application of orange essential oil as an antistaphylococcal agent in a dressing model. *BMC Complement. Altern. Med.* 2012;12(1):1.
8. Samber N, et al. Synergistic anti-candidal activity and mode of action of *Mentha piperita* essential oil and its major components. *Pharm. Biol.* 2015;53(10):1496-1504.
9. Schelz Z, et al. Antimicrobial and antiplasmid activities of essential oils. *Fitoterapia*. 2006;77(4): 279–285.
10. Saharkhiz M, et al. Chemical Composition, Antifungal and Antibiofilm Activities of the Essential Oil of *Mentha piperita*

L. ISRN Pharm. 2012; vol. 2012:p. 718645.

Terpinen-4-ol

1. Hart P, et al. Terpinen-4-ol, the main component of the essential oil of *Melaleuca alternifolia* (tea tree oil), suppresses inflammatory mediator production by activated human monocytes. *Inflamm. Res. Off. J. Eur. Histamine Res. Soc.* 2000;49(11):619–626.
2. Nogueira M, Aquino S, Rossa C, Spolidorio D. Terpinen-4-ol and alphaterpineol (tea tree oil components) inhibit the production of IL-1 β , IL-6 and IL-10 on human Macrophages. *Inflamm. Res. Off. J. Eur. Histamine Res. Soc.* 2014;63(9):769–778.
3. Ninomiya K, et al. Suppression of inflammatory reactions by terpinen-4-ol, a main constituent of tea tree oil, in a murine model of oral candidiasis and its suppressive activity to cytokine production of macrophages in vitro. *Biol. Pharm. Bull.* 2013;36(5):838–844.
4. Loughlin R, Gilmore B, McCarron P, Tunney M. Comparison of the cidal activity of tea tree oil and terpinen-4-ol against clinical bacterial skin isolates and human fibroblast cells. *Lett. Appl. Microbiol.* 2008;46(4):428–433.
5. Z. Khalil Z, et al. Regulation of wheal and flare by tea tree oil: complementary human and rodent studies. *J. Invest. Dermatol.* 2004;123(4):683–690.
6. Raman A, Weir U, Bloomfield S. Antimicrobial effects of tea-tree oil and its major components on *Staphylococcus aureus*, *Staph. epidermidis* and *Propionibacterium acnes*. *Lett. Appl. Microbiol.* 1995;21(4):242–245.
7. Bozzuto G, Colone M, Toccacieli L, Stringaro A, Molinari A. Tea tree oil might combat Melanoma. *Planta Med.* 2011;77(1):54–56.
8. Greay S, et al. Induction of necrosis and cell cycle arrest in murine cancer cell lines by *Melaleuca alternifolia* (tea tree)

- oil and terpinen-4-ol. *Cancer Chemother. Pharmacol.* 2010;65(5):877–888.
- 9. Wu C, et al. Terpinen-4-ol Induces Apoptosis in Human Nonsmall Cell Lung Cancer In Vitro and In Vivo. *Evid.-Based Complement. Altern. Med. ECAM.* 2012;818261.
 - 10. Ninomiya K, et al. Suppression of inflammatory reactions by terpinen-4-ol, a main constituent of tea tree oil, in a murine model of oral candidiasis and its suppressive activity to cytokine production of macrophages in vitro. *Biol. Pharm. Bull.* 2013;36(5):838–844.
 - 11. Taga I, Lan C, Altosaar I. Plant essential oils and mastitis disease: their potential inhibitory effects on pro-inflammatory cytokine production in response to bacteria related inflammation. *Nat. Prod. Commun.* 2012;7(5):675–682.
 - 12. Ramage G, et al.. Antifungal, cytotoxic, and immunomodulatory properties of tea tree oil and its derivative components: potential role in management of oral candidosis in cancer patients. *Front. Microbiol.* 2012; 3:220.
 - 13. Ninomiya K, et al. The essential oil of *Melaleuca alternifolia* (tea tree oil) and its main component, terpinen-4-ol protect mice from experimental oral candidiasis. *Biol. Pharm. Bull.* 2012; 35(6):861–865.

Citronellol

- 1. Gonzalez-Audino P, et al. Comparative toxicity of oxygenated monoterpenoids in experimental hydroalcoholic lotions to permethrin resistant adult head lice. *Arch. Dermatol. Res.* 2011;303(5):361–366.
- 2. de O. Pereira F, et al. Antifungal activity of geraniol and citronellol, two monoterpenes alcohols, against *Trichophyton rubrum* involves inhibition of ergosterol biosynthesis. *Pharm. Biol.* 2015; 53(2): 228–234.
- 3. Cronin H, Draels Z. Top 10 botanical ingredients in 2010 anti-aging creams. *J. Cosmet. Dermatol.* 2010;9(3):218–225.

4. Nerio L, Olivero-Verbel J, Stashenko E. Repellent activity of essential oils: a review. *Bioresour. Technol.* 2010; 101(1): 372–378.
5. Zhuang S, et al. Effect of citronellol and the Chinese medical herb complex on cellular immunity of cancer patients receiving chemotherapy/radiotherapy. *Phytother. Res. PTR.* 2009;23(6): 785–790.
6. Maggi F, et al. Chemical composition and in vitro biological activities of the essential oil of *Vepris macrophylla* (BAKER) I.VERD. endemic to Madagascar. *Chem. Biodivers.* 2013;10(3):356–366.
7. Guerrini A, et al. Chemical characterization (GC/MS and NMR Fingerprinting) and bioactivities of South-African *Pelargonium capitatum* (L.) L'Her. (Geraniaceae) essential oil. *Chem. Biodivers.* 2011;8(4):624–642.

Linalyl Acetate

1. Igarashi T. Physical and psychologic effects of aromatherapy inhalation on pregnant women: a randomized controlled trial. *Journal of Alternative and Complementary Medicine.* 2013;19(10):805-810.
2. Peana A, et al. Anti-inflammatory activity of linalool and linalyl acetate constituents of essential oils. *Phytomedicine Int. J. Phytother. Phytopharm.* 2002;9(8):721–726.
3. Barocelli E. Antinociceptive and gastroprotective effects of inhaled and orally administered *Lavandula hybrida* Reverchon Grosso essential oil. *Life Sci.* 2004;76(2):213–223.
4. Tadtong S, et al. Antimicrobial activity of blended essential oil preparation. *Nat. Prod. Commun.* 2012;7(10):1401–1404.

Limonene

1. Soković M, et al. Antibacterial effects of the essential oils of

- commonly consumed medicinal herbs using an in vitro model. *Mol. Basel Switz.* 2010; 15(11):7532–7546.
- 2. Di Pasqua R, et al. Membrane toxicity of antimicrobial compounds from essential oils. *J. Agric. Food Chem.* 2007;55(12):4863–4870.
 - 3. Yang S, et al. Comparative study of the chemical composition and antioxidant activity of six essential oils and their components. *Nat. Prod. Res.* 2010;24(2):140–151.
 - 4. Crowell P, et al. Human metabolism of the experimental cancer therapeutic agent d-limonene. *Cancer Chemother. Pharmacol.* 1994;35(1):31–37.
 - 5. Manassero C, et al. In vitro comparative analysis of antiproliferative activity of essential oil from mandarin peel and its principal component limonene. *Nat. Prod. Res.* 2013;27(16):1475–1478.
 - 6. Zhang X, et al. Synergistic inhibitory effect of berberine and d-limonene on human gastric carcinoma cell line MGC803. *J. Med. Food.* 2014;17(9):955–962.
 - 7. Inouye S, Takizawa T, and Yamaguchi H. Antibacterial activity of essential oils and their major constituents against respiratory tract pathogens by gaseous contact. *J. Antimicrob. Chemother.* 2001;47(5):565–573.
 - 8. Kummer R, et al. Evaluation of Anti-Inflammatory Activity of Citrus latifolia Tanaka Essential Oil and Limonene in Experimental Mouse Models. *Evid.-Based Complement. Altern. Med. ECAM.* 2013; 859083.
 - 9. d'Alessio P, et al. Skin repair properties of d-Limonene and perillyl alcohol in murine models. *Anti-Inflamm. Anti-Allergy Agents Med. Chem.* 2014;13(1):29–35.
 - 10. Tan X, et al. Monoterpenes: Novel insights into their biological effects and roles on glucose uptake and lipid metabolism in 3T3-L1 adipocytes. *Food Chem.* 2016;196:242–250.
 - 11. Ostan R et al. Impact of diet and nutraceutical

- supplementation on inflammation in elderly people. Results from the RISTOMED study, an open-label randomized control trial. *Clin. Nutr. Edinb. Scotl.* Jul. 2015.
- 12. Jing L, et al. Preventive and ameliorating effects of citrus D-limonene on dyslipidemia and hyperglycemia in mice with high-fat diet-induced obesity. *Eur. J. Pharmacol.* 2013;715(1–3): 46–55.
 - 13. Xie P, et al. Effect of toothpaste containing d-limonene on natural extrinsic smoking stain: a 4-week clinical trial. *Am. J. Dent.* 2010;23(4):196–200.
 - 14. Subramenium G, et al. Limonene inhibits streptococcal biofilm formation by targeting surface-associated virulence factors. *J. Med. Microbiol.* 2015;64(8):879–890.

Linalool

- 1. S. Tadtong, S. Suppawat, A. Tintawee, P. Saramas, S. Jareonvong, and T. Hongratanaworakit, “Antimicrobial activity of blended essential oil preparation,” *Nat. Prod. Commun.*, vol. 7, no. 10, pp. 1401–1404, Oct. 2012.
- 2. A. Herman, K. Tambor, and A. Herman, “Linalool Affects the Antimicrobial Efficacy of Essential Oils,” *Curr. Microbiol.*, vol. 72, no. 2, pp. 165–172, Feb. 2016.
- 3. A. T. Peana, P. S. D’Aquila, F. Panin, G. Serra, P. Pippia, and M. D. L. Moretti, “Anti-inflammatory activity of linalool and linalyl acetate constituents of essential oils,” *Phytomedicine Int. J. Phytother. Phytopharm.*, vol. 9, no. 8, pp. 721–726, Dec. 2002.
- 4. A. T. Peana, S. Marzocco, A. Popolo, and A. Pinto, “(-)-Linalool inhibits in vitro NO formation: Probable involvement in the antinociceptive activity of this monoterpenoid compound,” *Life Sci.*, vol. 78, no. 7, pp. 719–723, Jan. 2006.
- 5. M. Linck, A. L. da Silva, M. Figueiró, A. L. Piato, A. P. Herrmann, F. Dupont Birck, E. B. Caramão, D. S. Nunes, P. R. H. Moreno, and E. Elisabetsky, “Inhaled linalool-induced

- sedation in mice," *Phytomedicine Int. J. Phytother. Phytopharm.*, vol. 16, no. 4, pp. 303–307, Apr. 2009.
6. T. Umezawa, "Evaluation of the Effects of Plant-derived Essential Oils on Central Nervous System Function Using Discrete Shuttle-type Conditioned Avoidance Response in Mice: ESSENTIAL OILS AND AVOIDANCE RESPONSE," *Phytother. Res.*, vol. 26, no. 6, pp. 884–891, Jun. 2012.
 7. K. Kuroda, N. Inoue, Y. Ito, K. Kubota, A. Sugimoto, T. Kakuda, and T. Fushiki, "Sedative effects of the jasmine tea odor and (R)-(-)-linalool, one of its major odor components, on autonomic nerve activity and mood states," *Eur. J. Appl. Physiol.*, vol. 95, no. 2–3, pp. 107–114, Oct. 2005.
 8. E. Barocelli, F. Calcina, M. Chiavarini, M. Impicciatore, R. Bruni, A. Bianchi, and V. Ballabeni, "Antinociceptive and gastroprotective effects of inhaled and orally administered *Lavandula hybrida Reverchon 'Grosso'* essential oil," *Life Sci.*, vol. 76, no. 2, pp. 213–223, Nov. 2004.

The Importance of Sourcing

Satyal P, Murray BL, McFeeters RL, et al. Essential Oil Characterization of *Thymus vulgaris* from Various Geographical Locations. *Foods*. 2016;5(4). doi: 10.3390/foods5040070.

doTERRA Balance® Grounding Blend

Chang S. Effects of aroma hand massage on pain, state anxiety and depression in hospice patients with terminal cancer. *Taehan Kanho Hakhoe Chi*. 2008;38(4):493–502.

AromaTouch® Oil Blend: Chemistry of Usage

1. Kuriyama H, Watanabe S, Nakaya T, et al. Immunological and Psychological Benefits of Aromatherapy Massage. *Evid Based Complement Alternat Med*. 2005;2(2):179-184.

2. Johnson JR, Rivard RL, Griffin KH, et al. The effectiveness of nurse-delivered aromatherapy in an acute care setting. *Complement Ther Med.* 2016;25:164-9.
3. Varney E, Buckle J. Effect of inhaled essential oils on mental exhaustion and moderate burnout: a small pilot study. *J Altern Complement Med.* 2013;19(1):69-71.
4. Toda M, Morimoto K. Effect of lavender aroma on salivary endocrinological stress markers. *Arch Oral Biol.* 2008;53(10):964-968.
5. Cooke M, Holzhauser K, Jones M, Et Al. The effect of aromatherapy massage with music on the stress and anxiety levels of emergency nurses: comparison between summer and winter. *J Clin Nurs.* 2007;16(9):1695-1703.
6. Lima NG, De Sousa DP, Pimenta FC, Et Al. Anxiolytic-like activity and GC-MS analysis of (R)-(+)-limonene fragrance, a natural compound found in foods and plants. *Pharmacol Biochem Behav.* 2013;103(3):450-454.
7. de Almeida AA, Costa JP, de Carvalho RB, Et Al. Evaluation of acute toxicity of a natural compound (+)-limonene epoxide and its anxiolytic-like action. *Brain Res.* 2012;1448:56-62.
8. Umez T. Evaluation of the effects of plant-derived essential oils on central nervous system function using discrete shuttle-type conditioned avoidance response in mice. *Phytother Res.* 2012;26(6):884-891.

The Chemistry of Petitgrain Essential Oil

1. Linck V, da Silva A, Figueiro M, Piato A, Herrmann A, Dupont Dirck F, Caramao E, Nunes D, Moreno P, and Elisabetsky E. Inhaled linalool-induced sedation in mice. *Phytomedicine Int. J. Phytother. Phytopharm.* 2009; 16(4):303-307.
2. Umez T. Evaluation of the effects of plant-derived essential oils on central nervous system function using discrete shuttle-type conditioned avoidance response in

- mice. *Phytother. Res.* 2012; 26(6):884-891.
- 3. Kuroda K, Inoue N, Ito Y, Kubota K, Sugimoto A, Kakuda T, Fushiki T. Sedative effects of the jasmine tea odor and (R)-(-)-linalool, one of its major odor components, on autonomic nerve activity and mood states. *Eur. J. Appl. Physiol.* 2005; 95(2-3):107-114.
 - 4. Tadtong S, Suppawat S, Tintawee A, Saramas P, Jareonvong S, Hongratanaworakit T. Antimicrobial activity of blended essential oil preparation. *Nat. Prod. Commun.* 2012; 7(10):1401-1404.
 - 5. Ellouze I, Abderrabba M, Sabaou N, Mathieu F, Lebrihi A, Bouajila J. Season's variation impact on *Citrus aurantium* leaves essential oil: chemical composition and biological activities. *J. Food Sci.* 2012; 77(9):T173-180.
 - 6. Koto R, Imamura M, Watanabe C, Obayashi S, Shiraishi M, Sasaki Y, Azuma H. Linalyl acetate as a major ingredient of lavender essential oil relaxes the rabbit vascular smooth muscle through dephosphorylation of myosin light chain. *J. Cardiovasc. Pharmacol.* 2006; 48(1):850-856.
 - 7. Barocelli E, Calcina F, Chiavarini M, Impicciatore M, Bruni R, Bianchi A, Ballabeni V. Antinociceptive and gastroprotective effects of inhaled and orally administered *Lavandula hybrida Reverchon Grosso* essential oil. *Life Sci.* 2004; 76(2): 213-223.
 - 8. Peana A, D'Aquila P, Panin F, Serra G, Pippia P, Moretti M. Anti-inflammatory activity of linalool and linalyl acetate constituents of essential oils. *Phytomedicine Int. J. Phytother. Pyhtopharm.* 2002; 9(8): 921-726.
 - 9. Takahashi M, Satou T, Ohashi M, Hayashi S, Sadamoto K, Koike K. Interspecies comparison of chemical composition and anxiolytic-like effects of lavender oils upon inhalation. *Nat. Prod. Commun.* 2011; 6(11):1769-1774.
 - 10. Sarrou E, Chatzopoulou P, Dimassi-Theriou K, Therios I. Volatile Constituents and Antioxidant Activity of Peel,

- Flowers and Leaf Oils of Citrus aurantium L. Growing in Greece. *Molecules*. 2013; 18(9): 10639-10647.
11. Chaiyana W, Okonogi S. Inhibition of cholinesterase by essential oil from food plant. *Phytomedicine Int. J. Phytother. Phytopharm.* 2012; 19(8-9):836-839.

Monoterpenes: Taking a Deeper Breath

Paparoupa M, Gillissen A. Is Myrtol® Standardized a New Alternative toward Antibiotics? *Pharmacogn Rev*. 2016;10(20): 143-146. DOI: 10.4103/0973-7847.194045.

The Antioxidant Benefits of Carvacrol

Türkez H, Aydin E. Investigation of cytotoxic, genotoxic and oxidative properties of carvacrol in human blood cells. *Toxicol Ind Health*. 2016;32(4):625-33. doi: 10.1177/0748233713506771.

Marjoram Essential Oil May Support Neurological Function

1. Cummings JL, Vinters HV, Cole GM, Khachaturian ZS. Alzheimer's disease: Etiologies, pathophysiology. Cognitive reserve and treatment opportunities. *Neurology*. 1988;51:2-17
2. Hajlaoui H, Mighri H, Aouni M, Gharsallah N, Kadri A. Chemical composition and in vitro evaluation of antioxidant, antimicrobial, cytotoxicity and anti-acetylcholinesterase properties of Tunisian Origanum majorana L. essential oil. *Microb Pathog*. 2016;95:86-94. doi: 10.1016/j.micpath.2016.03.003.

Plants Smell Terpenes

Matsui K. A portion of plant airborne communication is endorsed by uptake and metabolism of volatile organic compounds. *Curr Opin Plant Biol*. 2016;32:24-30. doi:10.1016/j.pbi.2016.05.005.

Eucalyptol and Seasonal Support

Li Y, Lai Y, Wang Y, Liu N, Zhang F, Xu P. 1, 8-Cineol Protect Against Influenza-Virus-Induced Pneumonia in Mice. *Inflammation.* 2016;39(4):1582-1593. doi:10.1007/s10753-016-0394-3.

Genetics of Lemongrass Essential Oil

Meena S, Kumar SR, Venkata Rao DK, et al. De Novo Sequencing and Analysis of Lemongrass Transcriptome Provide First Insights into the Essential Oil Biosynthesis of Aromatic Grasses. *Front Plant Sci.* 2016;7:1129. doi:10.3389/fpls.2016.01129.

Carvacrol and Thymol Support Healthy Immuno-Respiratory Response *in vitro*

Khosravi AR, Erle DJ. Chitin-Induced Airway Epithelial Cell Innate Immune Responses Are Inhibited by Carvacrol/Thymol. *PLoS ONE* 11(7):e0159459.

Vetiver is an Environmental Superhero

1. Joy RJ. "Sunshine" Vetivergrass *Chrysopogon zizanoides* (L.) Roberty. USDA NRCS Plant Guid.
2. Banerjee R, Goswami P, Pathak K, Mukherjee A. Vetiver grass: An environmental clean-up tool for heavy metal contaminated iron ore mine-soil. *Ecol Eng.* 2016;90:25-34.
3. Singh V, Thakur L, Mondal P. Removal of Lead and Chromium from Synthetic Wastewater Using *Vetiveria zizanoides*. *CLEAN - Soil, Air, Water.* 2015; 43(4):538-543.
4. Vargas C, Perez-Esteban J, Escolastico C, Masaguer A, Moliner A. Phytoremediation of Cu and Zn by vetiver grass in mine soils amended with humic acids. *Environ Sci Pollut Res.* 2016; 23(13):13521-13530.

Caryophyllene is a Cannabinoid

1. Gertsch J, Leonti M, Raduner S, et al. Beta-caryophyllene is a dietary cannabinoid. *Proc Natl Acad Sci.* 2008; 105(26): 9099-9104.
2. Nikan M, Nabavi SM, Manayi A, Ligands for cannabinoid receptors, promising anticancer agents. *Life Sci.* 2016; 146:124-130.

Terpenes in the Air

1. Alves EG, Jardine K, Tota J, et al. Seasonality of isoprenoid emissions from a primary rainforest in central Amazonia. *Atmos Chem Phys.* 2016; 16(6):3903-3925.
2. Geron C, Rasmussen R, R. Arnts R, Guenther A. A review and synthesis of monoterpene speciation from forests in the United States. *Atmos Environ.* 2000; 34(11):1761-1781.

Oregano Supports Healthy Intestinal Morphology

Zou Y, Xiang Q, Wang J, et al. Oregano Essential Oil Improves Intestinal Morphology and Expression of Tight Junction Proteins Associated with Modulation of Selected Intestinal Bacteria and Immune Status in a Pig Model. *Biomed Res Int.* 2016; 2016:1-11.

Evolution of Spiders to Take Advantage of Essential Oils

Tedore C, Johnsen S. Immunological dependence of plant-dwelling animals on the medicinal properties of their plant substrates: a preliminary test of a novel evolutionary hypothesis. *Arthropod Plant Interact.* 2015; 9(5):437-446.

Spearmint and Dill May Support Healthy Nervous System Function

Nogoceke FP, Barcaro IMR, de Sousa DP, Andreatini R. Antimanic-like effects of (R)-(-)-carvone and (S)-(+)-carvone in mice. *Neurosci Lett.* 2016;619:43-48.

Lice Repelled by Clove Oil

1. Soonwera M, Wongnet O, Sittichok S. Ovicultural effect of essential oils from Zingiberaceae plants and Eucalyptus globulus on eggs of head lice, *Pediculus humanus capitis* De Geer. *Phytomedicine*. 2018;47:93-104. doi: 10.1016/j.phymed.2018.04.050.
2. Iwamatsu T, Miyamoto D, Mitsuno H, et al. Identification of repellent odorants to the body louse, *Pediculus humanus corporis*, in clove essential oil. *Parasitol Res*. 2016;115(4): 1659-1666.

Omega-3 Supplementation Supports Full-Term Birth*

Kar S, Wong M, Rogozinska E, Thangaratinam S. Effects of Omega-3 Fatty Acids in Prevention of Early Preterm Delivery: a Systematic Review and Meta-analysis of Randomised Studies. *Eur J Obstet Gynecol Reprod Biol*. 2015;198:40-46.

Linalool May Support Healthy Functioning of the Brain

Sabogal-Guáqueta AM, Osorio E, Cardona-Gómez GP. Linalool reverses neuropathological and behavioral impairments in old triple transgenic Alzheimer's mice. *Neuropharmacology*. 2015;102:111-120.

Healthy Inflammation Response with Carvacrol

Kara M, Uslu S, Demirci F, Temel HE, Baydemir C. Supplemental carvacrol can reduce the severity of inflammation by influencing the production of mediators of inflammation. *Inflammation*. 2015;38(3):1020-1027.

Geraniol and Colon Health

1. Soubh AA, Abdallah DM, El-Abhar HS. Geraniol ameliorates TNBS-induced colitis: Involvement of Wnt/β-catenin,

- p38MAPK, NF κ B, and PPAR γ signaling pathways. *Life Sci.* 2015;136:142-150.
2. Marieb E, Hoehn K. *Human Anatomy & Physiology*. Boston: Pearson; 2013.
 3. De Fazio L, Spisni E, Cavazza E, et al. Dietary Geraniol by Oral or Enema Administration Strongly Reduces Dysbiosis and Systemic Inflammation in Dextran Sulfate Sodium-Treated Mice. *Front Pharmacol.* 2016;7:38.

Research Shows that Concentration Matters

Llana-Ruiz-Cabello M, Gutiérrez-Praena D, Puerto M, Pichardo S, Jos Á, Cameán AM. In vitro pro-oxidant/antioxidant role of carvacrol, thymol and their mixture in the intestinal Caco-2 cell line. *Toxicol In Vitro*. 2015;29(4):647-656.

Cinnamaldehyde May Support Healthy Kidney Function

Huang J-S, Lee Y-H, Chuang L-Y, Guh J-Y, Hwang J-Y. Cinnamaldehyde and nitric oxide attenuate advanced glycation end products-induced the Jak/STAT signaling in human renal tubular cells. *J Cell Biochem*. 2015;116(6):1028-1038.

Potential Healthy Colon Cell Support with Cinnamaldehyde

Long M, Tao S, Rojo de la Vega M, et al. Nrf2-dependent suppression of azoxymethane/dextran sulfate sodium-induced colon carcinogenesis by the cinnamon-derived dietary factor cinnamaldehyde. *Cancer Prev Res (Phila)*. 2015;8(5):444-454.

Clove's Eugenol Helps Maintain Normal Gastrointestinal Motility

Garabadu D, Shah A, Singh S, Krishnamurthy S. Protective effect of eugenol against restraint stress-induced gastrointestinal dysfunction: Potential use in irritable bowel syndrome. *Pharm Biol*. 2015;53(7):968-974.

Sandalwood May Support Healthy Cell Renewal

1. Bianconi E, Piovesan A, Facchini F, et al. An estimation of the number of cells in the human body. *Ann Hum Biol.* 40(6): 463-471.
2. Santha S, Dwivedi C. Anticancer Effects of Sandalwood (*Santalum album*). *Anticancer Res.* 2015;35(6):3137-3145.

Reduce Sad Feelings with Essential Oils

Guzmán-Gutiérrez SL, Bonilla-Jaime H, Gómez-Cansino R, Reyes-Chilpa R. Linalool and β -pinene exert their antidepressant-like activity through the monoaminergic pathway. *Life Sci.* 2015;128:24-29.

Rose Plant Communication Helps Other Plants

Yu P, Su Y, Dong C, Yao C, Ding Y, Zhou X. Preliminary proteomic analysis of tobacco leaves affected by volatile organic compounds from floral scent of rose. *Plant Growth Regul.* 2014;75(3):689-694.

The Neuroprotective Effects of Beta-Caryophyllene

1. Zhang HY, Gao M, Shen H, Bi GH, Yang HJ, Liu QR, Wu J, Gardner EL, Bonci A, Xi ZX (2016). "Expression of functional cannabinoid CB2 receptor in VTA dopamine neurons in rats". *Addiction Biology*.
2. Stempel AV, Stumpf A, Zhang HY, Özdoğan T, Pannasch U, Theis AK, Otte DM, Wojtalla A, Rácz I, Ponomarenko A, Xi ZX, Zimmer A, Schmitz D (2016). "Cannabinoid Type 2 Receptors Mediate a Cell Type-Specific Plasticity in the Hippocampus." *Neuron.* 90 (4): 795–809
3. Elphick MR, Egertová M (Mar 2001). "The neurobiology and evolution of cannabinoid signalling". *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences.* 356 (1407): 381–408

4. Viveros-Paredes JM, González-Castañeda RE, Gertsch J. Neuroprotective Effects of β -Caryophyllene against Dopaminergic Neuron Injury in a Murine Model of Parkinson's Disease Induced by MPTP. *Pharmaceuticals (Basel)*. 2017 Jul 6;10(3). pii: E60. doi: 10.3390/ph10030060.

Active Travel in Air Pollution

Tainio M, De nazelle AJ, Götschi T, et al. Can air pollution negate the health benefits of cycling and walking?. *Prev Med*. 2016;87:233-236.

Reliable Sources on Essential Oil Research

1. PubMed. <https://www.ncbi.nlm.nih.gov/pubmed/>
2. Google Scholar. <https://scholar.google.com/>
3. AromaticScience. <http://www.aromaticscience.com/>

Lemon Oil and Cardiovascular Health

Lee H, Woo M, Kim M, et al. Antioxidative and Cholesterol-Lowering Effects of Lemon Essential Oil in Hypercholesterolemia-Induced Rabbits. *Prev Nutr Food Sci*. 2018;23(1):8-14.

Sustaining Our Soil

Arsenault C. Only 60 Years of Farming Left If Soil Degradation Continues. *Scientificamerican.com*. <https://www.scientificamerican.com/article/only-60-years-of-farming-left-if-soil-degradation-continues/>. Published December 5, 2014. Accessed May 31, 2018.

Tick-Repellent Properties of Essential Oils

1. Other TBDs | Partnership for Tick-borne Diseases Education. (n.d.). Retrieved June 27, 2017, from <https://>

- www.partnershipfortick-bornediseaseseducation.org/tick-borne-diseases-overview/other-tbds/
2. Štefanidesová K, Škultéty L', Sparagano OAE et al. The repellent efficacy of eleven essential oils against adult *Dermacentor reticulatus* ticks. *Tick Borne Dis.* 2017 Jun 15. pii: S1877-959X(17)30077-8. doi: 10.1016/j.ttbdis.2017.06.003

Age, Memory, and Essential Oils

1. Takahashi, R. H., Nagao, T., & Gouras, G. K. (2017). Plaque formation and the intraneuronal accumulation of β -amyloid in Alzheimers disease. *Pathology International*, 67(4), 185-193. doi:10.1111/pin.12520
2. Lobbens, E. S., Vissing, K. J., Jorgensen, L., Weert, M. V., & Jäger, A. K. (2017). Screening of plants used in the European traditional medicine to treat memory disorders for acetylcholinesterase inhibitory activity and anti amyloidogenic activity. *Journal of Ethnopharmacology*, 200, 66-73. doi:10.1016/j.jep.2017.02.020
3. Ayaz, M., Sadiq, A., Junaid, M., Ullah, F., Subhan, F., & Ahmed, J. (2017). Neuroprotective and Anti-Aging Potentials of Essential Oils from Aromatic and Medicinal Plants. *Frontiers in Aging Neuroscience*, 9. doi:10.3389/fnagi.2017.00168

Psychological and Neurological Effects of Roman Chamomile

1. Kong, Y., Wang, T., Wang, R., Ma, Y., Song, S., Liu, J., . . . Li, S. (2017). Inhalation of Roman chamomile essential oil attenuates depressive-like behaviors in Wistar Kyoto rats. *Science China Life Sciences*. doi:10.1007/s11427-016-9034-8
2. Marieb, E. N., Hoehn, K., & Hutchinson, M. (2013). Human

anatomy & physiology. San Francisco, CA: Pearson Education/Benjamin Cummings.

Skin Aging and Essential Oils

Hwang, E., Ngo, H. T., Park, B., Seo, S., Yang, J., & Yi, T. (2017). Myrcene, An Aromatic Volatile Compound, Ameliorates Human Skin Extrinsic Aging via Regulation of MMPs Production. *The American Journal of Chinese Medicine*, 1-12. doi:10.1142/s0192415x17500604

Fennel Oil and Healthy Inflammatory Response

Rezayat SM, Dehpour AR, Motamed SM, et al. *Foeniculum vulgare* essential oil ameliorates acetic acid-induced colitis in rats through the inhibition of NF- κ B pathway. *Inflammopharmacology*. 2017 Oct 24. doi: 10.1007/s10787-017-0409-1.

Geranium Oil Alleviates Anxious Feelings

Shirzadegan R, Gholami M, Hasanvand S, et al. Effects of geranium aroma on anxiety among patients with acute myocardial infarction: A triple-blind randomized clinical trial. *Complement Ther Clin Pract*. 2017;29:201-206. doi: 10.1016/j.ctcp.2017.10.005.

Childbirth and Essential Oils

1. Dhany AL, Mitchell T, Foy C. Aromatherapy and massage intrapartum service impact on use of analgesia and anesthesia in women in labor: A retrospective case note analysis. *The Journal of Alternative and Complementary Medicine*. 2012;18(10):932-938.
2. Rashidi Fakari F, Tabatabaeichehr M, Kamali H, et al. Effect of Inhalation of Aroma of Geranium Essence on Anxiety and Physiological Parameters during First Stage of Labor in

Nulliparous Women: a Randomized Clinical Trial. J Caring Sci. 2015;4(2):135-141.

3. Namazi M, Amir Ali Akbari S, Mojab F, Et Al. Aromatherapy With Citrus Aurantium Oil and Anxiety During the First Stage of Labor. Iran Red Crescent Med J. 2014;16(6):e18371.
4. Burns E, Blamey C, Ersser SJ, et al. The use of aromatherapy in intrapartum midwifery practice an observational study. Complement Ther Nurs Midwifery. 2000;6(1):33-34.
5. Cruz AB, Lee SE, Pagaduan JC, et al. Effects of lavender (*lavandula angustifolia* Mill.) and peppermint (*Mentha cordifolia* Opiz.) aromas on subjective vitality, speed, and agility. The Asian International Journal of Life Sciences. 2012;21(1):31-37.
6. Moss M, Hewitt S, Moss L. Modulation of cognitive performance and mood by aromas of peppermint and ylang ylang. Intern. J. Neuroscience. 2008;118:59-77.
7. Jafarzadeh M, Arman S, Pour FF. Effect of aromatherapy with orange essential oil on salivary cortisol and pulse rate in children during dental treatment: A randomized controlled clinical trial. Adv Biomed Res. 2013;2:10.
8. Lehrner J, Marwinski G, Lehr S, et al. Ambient odors of orange and lavender reduce anxiety and improve mood in a dental office. Physiol Behav. 2005;86(1-2):92-95.
9. Lehrner J, Eckersberger C, Walla P, et al. Ambient odor of orange in a dental office reduces anxiety and improves mood in female patients. Physiol Behav. 2000;71(1-2):83-86.
10. Dale A, Cornwell S. The role of lavender oil in relieving perineal discomfort following childbirth: a blind randomized clinical trial. J Adv Nurs. 1994;19(1):89-96.
11. Sheikhan F, Jahdi F, Khoei EM, Et Al. Episiotomy pain relief: Use of Lavender oil essence in primiparous Iranian women. Complement Ther Clin Pract. 2012;18(1):66-70.
12. Jones C. The efficacy of lavender oil on perineal trauma: a

- review of the evidence. *Complement Ther Clin Pract.* 2011;17(4):215-220.
13. Vakilian K, Atarha M, Bekhradi R, Et Al. Healing advantages of lavender essential oil during episiotomy recovery: a clinical trial. *Complement Ther Clin Pract.* 2011;17(1):50-53.
 14. Hur MH, Han SH. Clinical trial of aromatherapy on postpartum mother's perineal healing. *Taehan Kanho Hakhoe Chi.* 2004;34(1):53-62.

Fear of Dental Visits

1. Walsh L. Anxiety prevention: Implementing the 4 S principle in conservative dentistry. *Auxiliary.* 2007;17:24–6.
2. Locker D. Psychosocial consequences of dental fear and anxiety. *Commun Dent Oral Epidemiol.* 2003;31:144–51.
3. Umez T. Evaluation of the Effects of Plant-derived Essential Oils on Central Nervous System Function Using Discrete Shuttle-type Conditioned Avoidance Response in Mice: ESSENTIAL OILS AND AVOIDANCE RESPONSE. *Phytother. Res.,* 2012;26(6):884–891.
4. Jafarzadeh M., Arman S., and Pour F. Effect of aromatherapy with orange essential oil on salivary cortisol and pulse rate in children during dental treatment: A randomized controlled clinical trial. *Adv Biomed Res.* 2013; 2: 10.

Nanoemulsion of Essential Oils

Borges RS, Lima ES, Keita H et al. Anti-inflammatory and antialgic actions of a nanoemulsion of Rosmarinus officinalis L. essential oil and a molecular docking study of its major chemical constituents. *Inflammopharmacology.* 2017 Jul 13. doi: 10.1007/s10787-017-0374-8.

Linalool and Blood Vessels

Kang P, Seol GH. Linalool elicits vasorelaxation of mouse aortae through activation of guanylyl cyclase and K(+) channels. *J Pharm Pharmacol.* 2015;67(5):714-719.

A Chemist's Perspective: Cannabinoids, Cannabis, and Caryophyllene

1. Gertsch J, Leonti M, Raduner S et al. Beta-caryophyllene is a dietary cannabinoid. *Proc Natl Acad Sci U S A.* 2008 Jul 1;105(26):9099-104. doi: 10.1073/pnas.0803601105. Epub 2008 Jun 23.
2. Klauke AL, Racz I, Pradier B et al. The cannabinoid CB₂ receptor-selective phytocannabinoid beta-caryophyllene exerts analgesic effects in mouse models of inflammatory and neuropathic pain. *Eur Neuropsychopharmacol.* 2014 Apr;24(4):608-20. doi: 10.1016/j.euroneuro.2013.10.008. Epub 2013 Oct 22.
3. Al Mansouri S, Ojha S, Al Maamari E et al. The cannabinoid receptor 2 agonist, β-caryophyllene, reduced voluntary alcohol intake and attenuated ethanol-induced place preference and sensitivity in mice. *Pharmacol Biochem Behav.* 2014 Sep;124:260-8. doi: 10.1016/j.pbb.2014.06.025. Epub 2014 Jul 3.
4. Quintans-Júnior LJ, Araújo AA et al. β-caryophyllene, a dietary cannabinoid, complexed with β-cyclodextrin produced anti-hyperalgesic effect involving the inhibition of Fos expression in superficial dorsal horn. *Life Sci.* 2016 Mar 15;149:34-41. doi: 10.1016/j.lfs.2016.02.049. Epub 2016 Feb 13.
5. Chicca A, Caprioglio D, Minassi A et al. Functionalization of β-caryophyllene generates novel polypharmacology in the endocannabinoid system. *ACS Chem Biol.* 2014 Jul 18;9(7): 1499-507. doi: 10.1021/cb500177c. Epub 2014 May 15.

6. Horváth B, Mukhopadhyay P, Kechrid M et al. β -Caryophyllene ameliorates cisplatin-induced nephrotoxicity in a cannabinoid 2 receptor-dependent manner. *Free Radic Biol Med.* 2012 Apr 15;52(8):1325-33. doi: 10.1016/j.freeradbiomed.2012.01.014. Epub 2012 Jan 31.
7. Fine PG, Rosenfeld MJ. The endocannabinoid system, cannabinoids, and pain. *Rambam Maimonides Med J.* 2013 Oct 29;4(4):e0022. doi: 10.5041/RMMJ.10129. eCollection 2013.
8. Alberti TB, Barbosa WL, Vieira JL, Raposo NR, Dutra RC. (-)- β -Caryophyllene, a CB2 Receptor-Selective Phytocannabinoid, Suppresses Motor Paralysis and Neuroinflammation in a Murine Model of Multiple Sclerosis. *Int J Mol Sci.* 2017 Apr 1;18(4). pii: E691. doi: 10.3390/ijms18040691.
9. Lou J, Teng Z, Zhang L, Yang J, Ma L, Wang F, Tian X, An R, Yang M, Zhang Q, Xu L, Dong Z. β -Caryophyllene/Hydroxypropyl- β -Cyclodextrin Inclusion Complex Improves Cognitive Deficits in Rats with Vascular Dementia through the Cannabinoid Receptor Type 2 -Mediated Pathway. *Front Pharmacol.* 2017 Jan 19;8:2. doi: 10.3389/fphar.2017.00002. eCollection 2017.
10. Bahi A, Al Mansouri S, Al Memari E, Al Ameri M, Nurulain SM, Ojha S. β -Caryophyllene, a CB2 receptor agonist produces multiple behavioral changes relevant to anxiety and depression in mice. *Physiol Behav.* 2014 Aug; 135:119-24. doi: 10.1016/j.physbeh.2014.06.003. Epub 2014 Jun 13
11. Kamikubo R, Kai K, Tsuji-Naito K, Akagawa M. β -Caryophyllene attenuates palmitate-induced lipid accumulation through AMPK signaling by activating CB2 receptor in human HepG2 hepatocytes. *Mol Nutr Food Res.* 2016 Oct;60(10):2228-2242. doi: 10.1002/mnfr.201600197. Epub 2016 Jun 16.

12. Bento AF, Marcon R, Dutra RC, Claudino RF, Cola M, Leite DF, Calixto JB. β -Caryophyllene inhibits dextran sulfate sodium-induced colitis in mice through CB2 receptor activation and PPAR γ pathway. *Am J Pathol.* 2011 Mar; 178(3):1153-66. doi: 10.1016/j.ajpath.2010.11.052.
13. Cheng Y, Dong Z, Liu S. β -Caryophyllene ameliorates the Alzheimer-like phenotype in APP/PS1 Mice through CB2 receptor activation and the PPAR γ pathway. *Pharmacology.* 2014;94(1-2):1-12. doi: 10.1159/000362689. Epub 2014 Aug 26.
14. Sourcing CBD: Marijuana, Industrial Hemp & the Vagaries of Federal Law. (n.d.). Retrieved September 26, 2017, from <https://www.projectcbd.org/about/cannabis-facts/sourcing-cbd-marijuana-industrial-hemp-vagaries-federal-law>

Lavender Oil and Serotonin

1. López, V., Nielsen, B., Solas, M., Ramírez, M. J., & Jäger, A. K. (2017). Exploring Pharmacological Mechanisms of Lavender (*Lavandula angustifolia*) Essential Oil on Central Nervous System Targets. *Frontiers in Pharmacology*, 8. doi: 10.3389/fphar.2017.00280
2. Rajdev, S., & Sharp, F. R. (1998). Neurotoxicity of NMDA Receptor Antagonists. Highly Selective Neurotoxins, 355-384. doi:10.1007/978-1-59259-477-1_14
3. Kandel, E. R., Schwartz, J. H., & Jessell, T. M. (1991). *Principles of neural science*. New York: Elsevier.

The Many Benefits of Quercetin

Anand David AV, Arulmoli R, Parasuraman S. Overviews of

biological importance of quercetin: A bioactive flavonoid. Phcog Rev 2016;10:84-9.

The Necessity of Sleep

1. Kaufmann T, Elvsåshagen T, Alnæs D, et al. The brain functional connectome is robustly altered by lack of sleep. *Neuroimage*. 2016;127:324-332. doi:10.1016/j.neuroimage.2015.12.028.
2. The importance of sleep. NIH Medline Plus. 2012;7:17. <https://medlineplus.gov/magazine/issues/summer12/articles/summer12pg17.html>. Accessed January 5, 2017.
3. Why is sleep important? nhlbi.nih.gov. <https://www.nhlbi.nih.gov/health/health-topics/topics/sdd/why>. Published February 22, 2012. Accessed January 5, 2017.

Sunlight Energizes T-Cells

Phan T, Jaruga B, Pingle S, Bandyopadhyay B, Ahern G. Intrinsic photosensitivity enhances motility of T lymphocytes. *Scientific Reports*. 2016;6:39479.

Oxidized Monoterpenes

Brared Christensson J, Karlberg A-T, Andersen KE, et al. Oxidized limonene and oxidized linalool - concomitant contact allergy to common fragrance terpenes. *Contact Dermatitis*. 2016;74(5):273-280.

Safety of Peppermint (menthol) and Eucalyptus (1,8-cineole) Use in Children

1. Sadlon AE, Lamson DW. Immune-modifying and

- antimicrobial effects of eucalyptus oil and simple inhalation devices. *Altern Med Rev.* 2010;15(1):33-47.
2. Serafino A, Sinibaldi Vallebona P, Andreola F, et al. Stimulatory effect of Eucalyptus essential oil on innate cell-mediated immune response. *BMC Immunol.* 2008;9:17.
 3. Ben-Arye E, Dudai N, Eini A, et al. Treatment of upper respiratory tract infections in primary care: a randomized study using aromatic herbs. *Evid Based Complement Alternat Med.* 2011;2011:690346.
 4. Korterink JJ, Rutten JMTM, Venmans L, Benninga MA, Tabbers MM. Pharmacologic Treatment in Pediatric Functional Abdominal Pain Disorders: A Systematic Review. *J Pediatr.* 2015;166(2):424-431.e6.
 5. Khanna R, MacDonald JK, Levesque BG. Peppermint Oil for the Treatment of Irritable Bowel Syndrome. *J Clin Gastroenterol.* 2014;48(6):505-512.

Essential Oil Cellular Activity

1. Bianconi E, Piovesan A, Facchin F, et al. An estimation of the number of cells in the human body. *Ann Hum Biol.* 40(6): 463-471.
2. Wilhelm M, Schlegl J, Hahne H, et al. Mass-spectrometry-based draft of the human proteome. *Nature.* 2014;509(7502):582-587.
3. Long M, Tao S, Rojo de la Vega M, et al. Nrf2-dependent suppression of azoxymethane/dextran sulfate sodium-induced colon carcinogenesis by the cinnamon-derived dietary factor cinnamaldehyde. *Cancer Prev Res (Phila).* 2015;8(5):444-454.
4. Kara M, Uslu S, Demirci F, Temel HE, Baydemir C. Supplemental carvacrol can reduce the severity of inflammation by influencing the production of mediators of

inflammation. Inflammation. 2015;38(3):1020-1027.

Peppermint & Ion Channels

1. Oz M, Lozon Y, Sultan A, Yang K-HS, Galadari S. Effects of monoterpenes on ion channels of excitable cells. Pharmacol Ther. 2015;152:83-97.
2. Pan R, Tian Y, Gao R, et al. Central mechanisms of menthol-induced analgesia. J Pharmacol Exp Ther. 2012;343(3):661-672.

Is it Safe to Ingest Essential Oils?

1. Coelho-de-Souza AN, Lahlou S, Barreto JEF, et al. Essential oil of *Croton zehntneri* and its major constituent anethole display gastroprotective effect by increasing the surface mucous layer. Fundam Clin Pharmacol. 2013;27(3):288-298.
2. Guesmi F, Ben Ali M, Barkaoui T, et al. Effects of *Thymus hirtus* sp. *algeriensis* Boiss. et Reut. (Lamiaceae) essential oil on healing gastric ulcers according to sex. Lipids Health Dis. 2014;13(1):138.
3. Moraes TM, Kushima H, Moleiro FC, et al. Effects of limonene and essential oil from *Citrus aurantium* on gastric mucosa: role of prostaglandins and gastric mucus secretion. Chem Biol Interact. 2009;180(3):499-505.
4. Moraes TM, Rozza AL, Kushima H, Pellizzon CH, Rocha LRM, Hiruma-Lima CA. Healing actions of essential oils from *Citrus aurantium* and d-limonene in the gastric mucosa: the roles of VEGF, PCNA, and COX-2 in cell proliferation. J Med Food. 2013;16(12):1162-1167.
5. Santin JR, Lemos M, Klein-Júnior LC, et al. Gastroprotective activity of essential oil of the *Syzygium aromaticum* and its major component eugenol in different animal models. Naunyn Schmiedebergs Arch Pharmacol. 2011;383(2):149-158.

6. Takayama C, de-Faria FM, de Almeida ACA, et al. Gastroprotective and ulcer healing effects of essential oil from *Hyptis spicigera* Lam. (Lamiaceae). *J Ethnopharmacol.* 2011;135(1):147-155.

A Fresh Look at Dilution

1. Marieb E, Hoehn K. *Human Anatomy & Physiology*. Boston: Pearson; 2013.
2. Sapra B, Jain S, Tiwary AK. Percutaneous permeation enhancement by terpenes: mechanistic view. *AAPS J.* 2008;10(1):120-132.
3. Cal K, Kupiec K, Sznitowska M. Effect of physicochemical properties of cyclic terpenes on their ex vivo skin absorption and elimination kinetics. *J Dermatol Sci.* 2006;41(2):137-142.
4. Cal K, Sopala M. Tremendous ex vivo child skin absorption and permeation of eucalyptol. *J Dermatol Sci.* 2008;52(2):139-140.
5. Cal K. How does the type of vehicle influence the in vitro skin absorption and elimination kinetics of terpenes? *Arch Dermatol Res.* 2006;297(7):311-315.
6. Jacobi U, Taube H, Schäfer UF, Sterry W, Lademann J. Comparison of four different in vitro systems to study the reservoir capacity of the stratum corneum. *J Control Release.* 2005;103(1):61-71.
7. Pelchrzim R v., Weigmann H-J, Schaefer H, et al. Determination of the formation of the stratum corneum reservoir for two different corticosteroid formulations using tape stripping combined with UV/VIS spectroscopy. Bestimmung der Ausbildung des Reservoirs innerhalb des Stratum corneum für zwei unterschi. *J der Dtsch Dermatologischen Gesellschaft.* 2004;2(11):914-919.
8. Rawlings A V., Harding CR. Moisturization and skin barrier

function. Dermatol Ther. 2004;17(s1):43-48.

Unique Character of Essential Oils

1. Baldinger P, Höflich AS, Mitterhauser M, et al. Effects of Silexan on the serotonin-1A receptor and microstructure of the human brain: a randomized, placebo-controlled, double-blind, cross-over study with molecular and structural neuroimaging. Int J Neuropsychopharmacol. 2015;18(4).
2. Gostner JM, Ganzera M, Becker K, et al. Lavender oil suppresses indoleamine 2,3-dioxygenase activity in human PBMC. BMC Complement Altern Med. 2014;14:503.
3. Sebai H, Selmi S, Rtibi K, Gharbi N, Sakly M. Protective Effect of *Lavandula stoechas* and *Rosmarinus officinalis* essential oils against reproductive damage and oxidative stress in alloxan-induced diabetic rats. J Med Food. 2015;18(2):241-249.
4. Dawidowicz AL, Olszowy M. Does antioxidant properties of the main component of essential oil reflect its antioxidant properties? The comparison of antioxidant properties of essential oils and their main components. Nat Prod Res. 2014;(801):1-12.

Internal Use of Essential Oils

1. Zhao H, Xie Y, Yang Q, et al. Pharmacokinetic study of cinnamaldehyde in rats by GC-MS after oral and intravenous administration. J Pharm Biomed Anal. 2014;89:150-157.
2. Chang W, Han L, Huang H, et al. Simultaneous determination of four volatile compounds in rat plasma after oral administration of Shexiang Baoxin Pill (SBP) by HS-SPDE-GC-MS/MS and its application to pharmacokinetic studies. J Chromatogr B. 2014;963:47-53.
3. D'Alessio P a., Ostan R, Bisson JF, Schulzke JD, Ursini M V., Béné MC. Oral administration of d-Limonene controls

inflammation in rat colitis and displays anti-inflammatory properties as diet supplementation in humans. *Life Sci.* 2013;92:1151-1156.

4. Crowell PL. Symposium on Phytochemicals : Biochemistry and Physiology Prevention and Therapy of Cancer by Dietary Monoterpenes 1. *Exp Biol.* 1999;775-778.
5. Liu JH, Chen GH, Yeh HZ, Huang CK, Poon SK. Enteric-coated peppermint-oil capsules in the treatment of irritable bowel syndrome: a prospective, randomized trial. *J Gastroenterol.* 1997;32:765-768.
6. Talpur N, Echard B, Ingram C, Bagchi D, Preuss H. Effects of a novel formulation of essential oils on glucose-insulin metabolism in diabetic and hypertensive rats: a pilot study. *Diabetes Obes Metab.* 2005;7:193-199.
7. Jager W. Metabolism of terpenoids in animal models and humans. In: Baser KHC, Buchbauer G, eds. *Handbook of Essential Oils: Science, Technology, and Applications*. Boca Raton, FL: CRC Press. Taylor & Francis Group; 2010:209-234.
8. 182.20 Essential Oils, Oleoresins (Solvent-Free), and Natural Extractives (Including Distillates). United States of America: 42 FR 14640, Mar. 15, 1977, unless otherwise noted; 2015. http://www.ecfr.gov/cgi-bin/text-idx?rgn=div5&node=21:3.0.1.1.13#se21.3.182_120.

Mucous Membranes and Essential Oils

1. Čapkovičová A, Maková Z, Piešová E, Alves A, Faix Š, Faixová Z. Evaluation of the effects of *Salvia officinalis* essential oil on plasma biochemistry, gut mucus and quantity of acidic and neutral mucins in the chicken gut. *Acta Vet Brno.* 2014;64(1):138-148.
2. Cone RA. Barrier properties of mucus. *Adv Drug Deliv Rev.* 2009;61(2):75-85.
3. Sigurdsson HH, Kirch J, Lehr C-M. Mucus as a barrier to

- lipophilic drugs. *Int J Pharm.* 2013;453(1):56-64.
4. Marieb E, Hoehn K. *Human Anatomy & Physiology*. Boston: Pearson; 2013.
 5. Coelho-de-Souza AN, Lahlou S, Barreto JEF, et al. Essential oil of *Croton zehntneri* and its major constituent anethole display gastroprotective effect by increasing the surface mucous layer. *Fundam Clin Pharmacol.* 2013;27(3):288-298.
 6. Moraes TM, Kushima H, Moleiro FC, et al. Effects of limonene and essential oil from *Citrus aurantium* on gastric mucosa: role of prostaglandins and gastric mucus secretion. *Chem Biol Interact.* 2009;180(3):499-505.
 7. Moraes TM, Rozza AL, Kushima H, Pellizzon CH, Rocha LRM, Hiruma-Lima CA. Healing actions of essential oils from *Citrus aurantium* and d-limonene in the gastric mucosa: the roles of VEGF, PCNA, and COX-2 in cell proliferation. *J Med Food.* 2013;16(12):1162-1167.
 8. Voynow JA, Rubin BK. Mucins, mucus, and sputum. *Chest.* 2009;135(2):505-512.
 9. Ueno-lio T, Shibakura M, Yokota K, et al. Lavender essential oil inhalation suppresses allergic airway inflammation and mucous cell hyperplasia in a murine model of asthma. *Life Sci.* 2014;108(2):109-115.
 10. Sudhoff H, Klenke C, Greiner JFW, et al. 1,8-Cineol Reduces Mucus-Production in a Novel Human Ex Vivo Model of Late Rhinosinusitis. *PLoS One.* 2015;10(7):e0133040.

Bioactivity of Essential Oils

1. Bakkali F, Averbeck S, Averbeck D, Idaomar M. Biological effects of essential oils - A review. *Food Chem Toxicol.* 2008;46:446-475.
2. Dwivedi GR, Gupta S, Roy S, et al. Tricyclic sesquiterpenes from *Vetiveria zizanoides* (L.) Nash as antimycobacterial agents. *Chem Biol Drug Des.* 2013;82(5):587-594.

3. Wang K, Li Z, Chen Y, Su C. The Pharmacokinetics of a Novel Anti-tumor Agent, b -Elemene, in Sprague-Dawley Rats. *Biopharm Drug Dispos.* 2005;26:301-307.
4. Wu XS, Xie T, Lin J, et al. An investigation of the ability of elemene to pass through the blood-brain barrier and its effect on brain carcinomas. *J Pharm Pharmacol.* 2009;61:1653-1656.

Essential Oil Metabolism

1. Levin J-O, Eriksson K, Falk A, Lof A. Renal elimination of verbenols in man following experimental alpha-pinene inhalation exposure. *Int Arch Occup Env Heal.* 1992;63:571-573.
2. Jager W. Metabolism of terpenoids in animal models and humans. In: Baser KHC, Buchbauer G, eds. *Handbook of Essential Oils: Science, Technology, and Applications.* Boca Raton, FL: CRC Press. Taylor & Francis Group; 2010:209-234.
3. Chow HHS, Salazar D, Hakim I a. Pharmacokinetics of perillylic acid in humans after a single dose administration of a citrus preparation rich in d-Limonene content. *Cancer Epidemiol Biomarkers Prev.* 2002;11(November):1472-1476.
4. Zhang Z, Chen H, Chan KK, Budd T, Ganapathi R. Gas chromatographic-mass spectrometric analysis of perillyl alcohol and metabolites in plasma. *J Chromatogr B Biomed Sci Appl.* 1999;728(1):85-95.
5. Gelb MH, Tamanoi F, Yokoyama K, Ghomashchi F, Esson K, Gould MN. The inhibition of protein prenyltransferases by oxygenated metabolites of limonene and perillyl alcohol. *Cancer Lett.* 1995;91(2):169-175.
6. Fukumoto S, Sawasaki E, Okuyama S, Miyake Y, Yokogoshi H. Flavor components of monoterpenes in citrus essential oils enhance the release of monoamines from rat brain slices. *Nutr Neurosci.* 2011;9(April 2006):73-80.

7. Bickers D, Calow P, Greim H, et al. A toxicologic and dermatologic assessment of linalool and related esters when used as fragrance ingredients. *Food Chem Toxicol.* 2003;41(7):919-942.
8. Kang P, Seol GH. Linalool elicits vasorelaxation of mouse aortae through activation of guanylyl cyclase and K(+) channels. *J Pharm Pharmacol.* 2015;67(5):714-719.
9. Koto R, Imamura M, Watanabe C, et al. Linalyl acetate as a major ingredient of lavender essential oil relaxes the rabbit vascular smooth muscle through dephosphorylation of myosin light chain. *J Cardiovasc Pharmacol.* 2006;48(1): 850-856.

Essential Oil Topical Application: To Dilute or Not to Dilute

1. Jager W, Buchbauer G, Jirovetz L, Fritzer M. Percutaneous-Absorption Of Lavender Oil From A Massage Oil. *J Soc Cosmet Chem.* 43(1):49-54.
2. Bronaugh RL, Wester RC, Bucks D, Maibach HI, Sarason R. In vivo percutaneous absorption of fragrance ingredients in rhesus monkeys and humans. *Food Chem Toxicol.* 1990;28(5):369-373.
3. Price S, Price L, eds. *Aromatherapy for Health Professionals.* 4th ed. Churchill Livingston Elsevier; 2012.

Health & Wellness

doTERRA Anti-Aging Eye Cream

1. Chaudhuri RK, Bojanowski K. Bakuchiol: a retinol-like functional compound revealed by gene expression profiling and clinically proven to have anti-aging effects. *Int J Cosmet Sci.*

2014;36(3):221-230. doi:10.1111/ics.12117

2. doTERRA International. (2017) An Eight Week Double Blind, Controlled Clinical Study to Evaluate the Efficacy of a Topical Product on Skin Condition. Internal doTERRA International report. Unpublished.

doTERRA Phytoestrogen Essential Complex

1. Chung H. Iodine and thyroid function. *Ann Pediatr Endocrinol Metab.* 2014; 19(1): 8–12.
2. Pike A, et al. Structure of the ligand-binding domain of oestrogen receptor beta in the presence of a partial agonist and a full antagonist. *EMBO J.* 1999;18(17):4608–4618, 1999.
3. Marini H, et al. Effects of the phytoestrogen genistein on bone metabolism in osteopenic postmenopausal women: a randomized trial,” *Ann. Intern. Med.* 2007;146(12):839–847.
4. Brooks J, et al. Supplementation with flaxseed alters estrogen metabolism in postmenopausal women to a greater extent than does supplementation with an equal amount of soy. *Am. J. Clin. Nutr.* 2004;79(2):318–325.
5. Cozzi R, et al., Taurine and ellagic acid: two differently-acting natural antioxidants. *Environ. Mol. Mutagen.* 1995;26(3):248–254.

doTERRA Bone Nutrient Essential Complex

1. Sozen T., Ozisik L, and Basaran N. An overview and management of osteoporosis. *Eur J Rheumatol.* 2017 Mar; 4(1): 46–56.
2. Bailey R. et al. Estimation of total usual calcium and vitamin D intakes in the United States. *J Nutr.* 2010;140(4):817-22.
3. Castiglioni S, et al. Magnesium and Osteoporosis: Current state of knowledge and future research directions. *Nutrients.* 2013; 5(8): 3022–3033.
4. Aghajanian A, et al. The roles and mechanisms of actions of

- vitamin C in bone: New developments. *J Bone Miner Res.* 2015 Nov;30(11):1945-55.
5. Holick M. and Chen T. Vitamin D deficiency: a worldwide problem with health consequences. *Am J Clin Nutr.* 2008;87(4): 1080S-6S.
 6. Sahota O. Understanding vitamin D deficiency. *Age Ageing.* 2014; 43(5): 589–591.
 7. International Osteoporosis Foundation. Osteoporosis facts and statistics. Retrieved from: <https://www.iofbonehealth.org/facts-and-statistics/calcium-studies-map>

Wild Orange Spotlight

1. Lehrner J, et al. Ambient odor of orange in a dental office reduces anxiety and improves mood in female patients. *Physiol. Behav.* 2000;71(1):83–86.
2. Goes T, et al. Effect of Sweet Orange Aroma on Experimental Anxiety in Humans. *J. Altern. Complement. Med.* 2012;18(8):798–804.
3. Xie P, et al. Effect of toothpaste containing d-limonene on natural extrinsic smoking stain: a 4-week clinical trial. *Am. J. Dent.* 2010;23(4).
4. Mansour S, et al. The comparison of the efficacy of citrus fragrance and fluoxetine in the treatment of major depressive disorder. *Horion of Medical Sciences.* 2004; 10(3): 43–48.
5. Yip Y. and Tam A. An experimental study on the effectiveness of massage with aromatic ginger and orange essential oil for moderate-to-severe knee pain among the elderly in Hong Kong. *Complement. Ther. Med.* 2008;16(3):131–138.
6. Jing L, et al. Preventive and ameliorating effects of citrus D-limonene on dyslipidemia and hyperglycemia in mice with high-fat diet-induced obesity. *Eur. J. Pharmacol.* 2013;715(1-3):46–55.
7. Singh P, et al. Chemical profile, antifungal, antiaflatoxigenic and antioxidant activity of Citrus maxima Burm. and Citrus sinensis (L.) Osbeck essential oils and their cyclic monoterpenes,

- D-Limonene. *Food Chem. Toxicol. Int. J. Publ. Br. Ind. Biol. Res. Assoc.* 2010;48(6):1734–1740.
8. Patrick L. Gastroesophageal reflux disease (GERD): a review of conventional and alternative treatments. *Altern. Med. Rev. J. Clin. Ther.* 2011;16(2):116–133.
 9. Baylac S. Inhibition of 5-lipoxygenase by essential oils and other natural fragrant extracts. *Int. J. Aromather.* 2003;13(2-3): 138–142, 2003.
 10. Park H, et al. Limonene, a natural cyclic terpene, is an agonistic ligand for adenosine A(2A) receptors,” *Biochem. Biophys. Res. Commun.* 2011;404(1):345–348.
 11. Lai Y., et al. In vitro studies of a distillate of rectified essential oils on sinonasal components of mucociliary clearance. *Am. J. Rhinol. Allergy.* 2014;28(3):244–248, Jun. 2014.

Aromatherapy Massage with Geranium Essential Oil Reduces Pre-Menstrual Discomforts

Lotfipur-Rafsanjani SM, Ravari A, Ghorashi Z, Haji-Maghsoudi S, Akbarinasab J, Bekhradi R. Effects of Geranium Aromatherapy Massage on Premenstrual Syndrome: A Clinical Trial. *Int J Prev Med.* 2018;9:98. doi: 10.4103/ijpvm.IJPVM_40_16.

Impact of Sitting on Lifespan

Diaz K, et al. Potential effects on mortality of replacing sedentary time with short sedentary bouts or physical activity: A national cohort study. *American Journal of Epidemiology.* 2018. doi: 10.1093/aje/kwy271.

Exercise and Mental Health

Chekroud S, et al. Association between physical exercise and mental health in 1·2 million individuals in the USA between 2011 and 2015: a cross-sectional study. *Lancet Psychiatry.* 2018;5(9): 739-746.

High Intensity Exercise and your Liver

1. Pettersson J, et al. Muscular exercise can cause highly pathological liver function tests in healthy men. *British Journal of Clinical Pharmacology*. 2008;65(2):253-259.
2. Amah U, et al. Effect of short term aerobic exercise on liver function of Students College of Health Sciences and Technology, Nnamdi Azikiwe University, Nnewi Campus, Anambra State, Nigeria. *Global Scientific Journals*. 2017;5(7):67-77.
3. Chinedu I, et al. Effects of regular exercise on the liver function tests of male subjects in college of health sciences, Nnamdi Azikiwe University, Nnewi campus, Anambra state, Nigeria. *International Journal of Current Research in Medical Sciences*. 2018;4(3). doi:10.22192/ijcrms.2018.04.03.010.
4. Delicata N, Delicat J, and Delicata L. Strenuous exercise – an unusual cause of deranged liver enzymes. *Case Reports in Clinical Medicine*. 2018;7:177-181.
5. Statland B, Winkel P, Bokelund H. Factors contributing to intra-individual variation of serum constituents: 2. Effects of exercise and diet on variation of serum constituents in healthy subjects. *Clinical Chemistry*. 1973. 19;1380-1383.

Sugar-Sweetened Beverages (SSBs) and Metabolic Health

Choo V, et al. Food sources of fructose-containing sugars and glycaemic control: systematic review and meta-analysis of controlled intervention studies. *BMJ*. 2018;363:k4644

Bioavailability and the Lifelong Vitality Pack

1. Centers for Disease Control. Second national report on biochemical indicators of diet and nutrition in the U.S. population 2012. Retrieved from: https://www.cdc.gov/nutritionreport/pdf/exesummary_web_032612.pdf.
2. Calton J. Prevalence of micronutrient deficiency in popular diet plans. *Journal of the International Society of Sports Nutrition*.

2010;7:24

3. Yetley E. Multivitamin and multimineral dietary supplements: definitions, characterization, bioavailability, and drug interactions. *American Journal of Clinical Nutrition.* 2007;85(1):269S-276S.
4. Xu Q, et al. Multivitamin use and telomere length in women. *American Journal of Clinical Nutrition.* 2009;89(6):1857-1863.
5. Ten Have G, et al. Absorption kinetics of amino acids, peptides, and intact proteins. *International Journal of Sport Nutrition and Exercise Metabolism.* 2007;17: S23-S36

The Truth About Potatoes

1. Kubik M, et al. The association of the school food environment with dietary behaviors of young adolescents. *American Journal of Public Health.* 2003;93(7):1168-1173.
2. National Nutrition Surveillance Centre. Dietary habits of the Irish population: results from SLÁN Annual Report 2003. Retrieved from: <http://www.ucd.ie/issda/static/documentation/slán/diethab.pdf>.
3. Mozaffarian D, et al. Changes in diet and lifestyle and long-term weight gain in women and men. *The New England Journal of Medicine.* 2011;364:2392-2404.
4. Pereira E., de Assis Costa J., and de Cassia Goncalves Alfenas R. Effect of glycemic index on obesity control. *Archives of Endocrinology and Metabolism.* 2015;59(3):245-251.
5. Veronese N, et al. Fried potato consumption is associated with elevated mortality: an 8-y longitudinal cohort study. *The American Journal of Clinical Nutrition.* 2017;106(1):162-167.
6. PREDIMED Study and SUN Project Investigators. Potato consumption does not increase blood pressure or incident hypertension in 2 cohorts of Spanish adults. *The Journal of Nutrition.* 2017;12(1):2272-2281.
7. Martinez-Puig D, et al. Long-term effects on the digestive tract of feeding large amounts of resistant starch: A study in pigs. *Journal of the Science of Food and Agriculture.* 2007;87(11):

1991-1999.

8. Diaz-Toledo c, et al. Satiety impact of different potato products compared to pasta control. *Journal of the American College of Nutrition*. 2016;35(6):537-543.
9. Rasmussen B, et al. An oral essential amino acid-carbohydrate supplement enhances muscle protein anabolism after resistance exercise. *Journal of Applied Physiology*. 2000;88(2):386-392.
10. Aragon A. and Schoenfeld B. Nutrient timing revisited: is there a post-exercise anabolic window? *Journal of the International Society of Sports Nutrition*. 2013;10(5). doi.org/10.1186/1550-2783-10-5.

Circadian Rhythms and Weight Management

1. Zitting KM, et al. Human resting energy expenditure varies with circadian phase. *Current Biology*. 2018. doi.org/10.1016/j.cub.2018.10.005
2. Chtourou H. and Souissi N. The effect of training at a specific time of day: a review. *Journal of Strength and Conditioning Research*. 2012;26(7):1984-2005.
3. Hill D, et al. Temporal specificity in adaptations to high-intensity exercise training. *Medicine & Science in Sports & Exercise*. 1998;30(30):450-455.

Sleep Deprivation and Dehydration

1. Rosinger A, et al. Short sleep duration is associated with inadequate hydration: Cross-cultural evidence from US and Chinese adults. *Sleep*. 2018;zsy210. doi.org/10.1093/sleep/zsy210
2. Trudel E. and Bourque C. Central clock excites vasopressin neurons by waking osmosensory afferents during late sleep. *Nature Neuroscience*. 2010;13(4):467-474.

3. Popkin B, et al. Water, hydration, and health. *Nutrition Reviews*. 2010;68(8):439-458.

Protein Before Bed

1. Bianco A, et al. Protein supplements consumption: a comparative study between the city centre and the suburbs of Palermo, Italy. *BMC Sports Science, Medicine & Rehabilitation*. 2014;6:29.
2. Mohanty D, et al. Milk derived bioactive peptides and their impact on human health – A review. *Saudi Journal of Biological Sciences*. 2016;23(5):577-583.
3. Leyh S, et al. Pre-sleep protein in casein supplement or whole-food form has no impact on resting energy expenditure or hunger in women. *British Journal of Nutrition*. 2018;120(9):988-994.

Love on the Brain

1. Fisher HE. Lust, attraction, and attachment in mammalian reproduction. *Hum Nat*. 1998;9(1):23-52.
2. K. Takahashi et al., “Imaging the passionate stage of romantic love by dopamine dynamics,” *Front. Hum. Neurosci.*, vol. 9, Apr. 2015.
3. “Love and the Brain | Department of Neurobiology.” [Online]. Available: <http://neuro.hms.harvard.edu/harvard-mahoney-neuroscience-institute/brain-newsletter/and-brain-series/love-and-brain>. [Accessed: 24-Jan-2019].
4. M. Leonti and L. Casu, “Ethnopharmacology of Love,” *Front. Pharmacol.*, vol. 9, Jul. 2018.

Lifting is Good for the Heart

1. Sloan R, et al. The effect of aerobic training and cardiac

autonomic regulation in young adults. *American Journal of Public Health*. 2009;99(5):921-928.

2. Lui Y, et al. Association of resistance exercise with cardiovascular disease morbidity and mortality. *Medicine & Science in Sports & Exercise*. 2018. doi: 10.1249/MSS.0000000000001822

Sleep for Your Heart's Sake!

Dominguez F, et al. Association of sleep duration and quality with subclinical atherosclerosis. *Journal of the American College of Cardiology*. 2019;73(2):134

Happiness and Physical Health

1. Mahmood S, et al. The Framingham Heart Study and the epidemiology of cardiovascular diseases: A historical perspective. *Lancet*. 2014;383(9921):999-1008.
2. Raina P, et al. The Canadian longitudinal study on aging (CLSA). *Canadian Journal of Aging*. 2009;28(3):221-229.
3. Vaillant G. and Mukamal K. Successful Aging. *American Journal of Psychiatry*. 2001;158;839-847.
4. Waldinger R. and Schulz M. What's love got to do with it?: Social functioning, perceived health, and daily happiness in married octogenarians. *Psychology Aging*. 2011;25(2):422-431.

Stressed Out? All You Need is Love!

Bourassa K, Ruiz J, Sbarra D. The impact of physical proximity and attachment working models on cardiovascular reactivity: Comparing mental activation and romantic partner presence. *Psychophysiology*. 2019; e13324. doi: 10.1111/psyp.13324.

Aerobic Fitness and Mortality Risk

1. Peteiro J, et al. Performance on exercise test predicts risk of

- death from cardiovascular disease and cancer. EuroEcho- Imaging 2018. Retrieved from: <https://www.escardio.org/The-ESC/Press-Office/Press-releases/Performance-on-exercise-test-predicts-risk-of-death-from-cardiovascular-disease-and-cancer>.
2. Shiroma E. and Lee IM. Physical activity and cardiovascular health: Lessons learned from epidemiological studies across age, gender, and race/ethnicity. *Circulation*. 2010;122:743-752.
 3. Campbell J. and Turner J. Debunking the myth of exercise-induced immune suppression: Redefining the impact of exercise on immunological health across the lifespan. *Frontiers in Immunology*. 2018;9:648.

Resolving for Success

1. DOMINICAN UNIVERSITY. Goals Research Summary. 2015. Retrieved from: <http://www.dominican.edu/academics/ahss/undergraduate-programs/psych/faculty/assets-gail-matthews/researchsummary2.pdf>
2. Lunenberg F. Goal-setting theory of motivation. *International Journal of Management, Business, and Administration*. 2011;15(1). Retrieved from: <http://www.nationalforum.com/Electronic%20Journal%20Volumes/Lunenburg,%20Fred%20C.%20Goal-Setting%20Theoryof%20Motivation%20IJMBA%20V15%20N1%202011.pdf>
3. Duckworth A. and Yeager D. Measurement matters: Assessing personal qualities other than cognitive ability for educational purposes. *Educational Researcher*. 2015;44(4):237-251.
4. Gagne's differentiated model of giftedness and talent (DMGT). *Journal for the Education of the Gifted*. 1999. <https://doi.org/10.1177/016235329902200209>
5. Lally P, et al. How are habits formed: Modelling habit formation in the real world. *European Journal of Social Psychology*. 2009. <https://doi.org/10.1002/ejsp.674>

Peppermint Oil and Athletic Performance

1. B. Raudenbush, B. Meyer, and B. Eppich, "The Effects of Odors on Objective and Subjective Measures of Athletic Performance," *Int. Sports J.*, vol. 6, no. 1, p. 14, 2002.
2. Lorig T. and Schwartz G. Brain and odor: Alteration of human EEG by odor administration. *Psychobiology*. 1988;16:281-284.
3. Meamarbashi A. and Rajabi A. The effects of peppermint on exercise performance. *Journal of the International Society of Sports Nutrition*. 2013;10:15.
4. Umez T, Sakata A, Ito H. Ambulation-promoting effect of peppermint oil and identification of its active constituents. *Pharmacol Biochem Behav*. 2001;69: 383-339.
5. Zänker KS, Tölle W, Blümel G, Probst J. Evaluation of surfactant-like effects of commonly used remedies for colds. *Respiration*. 1980;39: 150-157.

Dietary Fluctuation and Cardiovascular Health

- 1.O'Connor L, et al. Short-term effects of healthy eating pattern cycling on cardiovascular disease risk factors: Pooled results from two randomized controlled trials. *Nutrients*. 2018;10(11):1725
- 2.Pavletic A, et al. Exercise-induced elevation of liver enzymes in a healthy female research volunteer. *Psychosomatics*.2015;56(5): 604-606.

Grip Strength and Disease-Specific Mortality

1. Strand B, et al. The association of grip strength from midlife onwards with all-cause and cause-specific mortality over 17 years of follow-up in the Tromsø Study. *Journal of Epidemiology & Community Health*. 2016. doi.org/10.1136/jech-2015-206776.
2. Celis-Morales C, et al. Associations of grip strength with cardiovascular, respiratory, and cancer outcomes and all cause mortality: prospective cohort study of half a million UK Biobank

participants. BMJ. 2018;361:k1651.

Health Through the Holidays

1. Phelan S, Wing RR, Raynor HA, Dibello J, Nedeau K, Peng W. Holiday Weight Management by Successful Weight Losers and Normal Weight Individuals. J Consult Clin Psychol. 2008;76(3):442-448. doi:10.1037/0022-006X.76.3.442
2. Farias MM, Cuevas AM, Rodriguez F. Set-point theory and obesity. Metab Syndr Relat Disord. 2011;9(2):85-89. doi:10.1089/met.2010.0090

Sleep Deprivation and Weight Management

Cooper C, et al. Sleep deprivation and obesity in adults: a brief narrative review. BMJ Open, Sport & Exercise Medicine. 2018;4:e000392

Acetyl-L-Carnitine Deficiency and Mood

1. Marcovina SM, Sirtori C, Peracino A, et al. Translating the basic knowledge of mitochondrial functions to metabolic therapy: role of L-carnitine. Translational Research. 2013;161:73-84.
2. Traina G. The neurobiology of acetyl-L-carnitine. Front Biosci (Landmark Ed). 2016;21:1314-29.
3. Carla Nasca, Benedetta Bigio, Francis S. Lee, Sarah P. Young, Marin M. Kautz, Ashly Albright, James Beasley, David S. Millington, Aleksander A. Mathé, James H. Kocsis, James W. Murrough, Bruce S. McEwen, Natalie Rasgon. Acetyl-L-carnitine deficiency in patients with major depressive disorder. Proceedings of the National Academy of Sciences, 2018; 201801609 DOI: 10.1073/pnas.1801609115

Childhood Obesity and Food Rewards

S. Adise, C. F. Geier, N. J. Roberts, C. N. White, and K. L. Keller,

"Is brain response to food rewards related to overeating? A test of the reward surfeit model of overeating in children," *Appetite*, vol. 128, pp. 167–179, Sep. 2018.

Essential Fatty Acids and Cognitive Function

1. K. S. Panickar and S. J. Bhathena, "Control of Fatty Acid Intake and the Role of Essential Fatty Acids in Cognitive Function and Neurological Disorders," in *Fat Detection: Taste, Texture, and Post Ingestive Effects*, J.-P. Montmayeur and J. le Coutre, Eds. Boca Raton (FL): CRC Press/Taylor & Francis, 2010.
2. M. Adjepong, W. Yakah, W. S. Harris, R. A. Annan, M. B. Pontifex, and J. I. Fenton, "Whole blood n-3 fatty acids are associated with executive function in 2–6-year-old Northern Ghanaian children," *J. Nutr. Biochem.*, vol. 57, pp. 287–293, Jul. 2018.
3. R. Uauy and A. D. Dangour, 2006 Nutrition in brain development and aging: role of essential fatty acids. *Nutr. Rev.* 64, S24–S33; discussion S72–S91.

The Benefits of Exercise May be Controlled by a Molecular "Switch"

1. Lessard S., et al. JNK regulates muscle remodeling via myostatin/SMAD inhibition. *Nature Communications*. 2018;9(3030).
2. Lessard S., et al. Resistance to aerobic exercise training causes metabolic dysfunction and reveals novel exercise-regulated signaling networks. *Diabetes*. 2013;62: 2717–2727.

Long-Term Stimulant Use and Sleep

1. Mitchell D, et al. Beverage caffeine intake in the U.S. *Food and Chemical Toxicology*. 2014;63:136-142.
2. Park J, et al. Lifetime coffee consumption, pineal gland volume,

and sleep quality in late life. *Sleep*. 2018. doi.org/10.1093/sleep/zsy127

3. Drake C, et al. Caffeine effects on sleep taken 0, 3, or 6 hours before going to bed. *Journal of Clinical Sleep Medicine*. 2013;9(11):1195-1200.

Exercise Intensity and Chronic Disease

1. Gopinath B., Kifley A., Flood V., and Mitchell P. Physical Activity as a determinant of successful aging over ten years. *Scientific Reports*. 2018;8(1). DOI: 10.1038/s41598-018-28526-3
2. Robinson M, et al. Enhanced protein translation underlies improved metabolic and physical adaptations to different exercise training modes in young and old humans. *Cell Metabolism*. 2017;25(3):581-592.

"Leaning" on Leptin

1. Leibel R, et al. Genetic variation and nutrition in obesity: approaches to the molecular genetics of obesity. *World Rev Nutr Diet*. 1990;63:90-101.
2. Tartaglia L, et al. Identification and expression cloning of a leptin receptor, OB-R. *Cell*. 1995;83(7):1263-1271.
3. Flier J, et al. Leptin's physiologic role: Does the emperor of energy balance have no clothes? *Cell Metabolism*. 2017;26(1):24-26.
4. Bailey, L. Pharmacy Research Manufacturer's Association (PhRMA): First Annual Health Survey. 2013. Retrieved from: <http://www.phrma.org/press-release/new-survey-identifies-america-s-health-priorities-obesity-cancer-cures-senior-care>

Chocolate Milk for Recovery

Amiri M, Ghiasvand R, Kaviani M, Forbes SC, Salehi-abargouei A. Chocolate milk for recovery from exercise: a systematic review and meta-analysis of controlled clinical trials. *Eur J Clin Nutr*.

2018;

Exercise and Chronic Back Pain

1. Park TSW, Kuo A, Smith MT. Chronic low back pain: a mini-review on pharmacological management and pathophysiological insights from clinical and pre-clinical data. *Inflammopharmacology*. 2018;
2. Wewege M, Booth J, Parmenter B. Aerobic vs. resistance exercise for chronic non-specific low back pain: A systematic review and meta-analysis. *J Back Musculoskelet Rehabil*. 2018;

Benefits of Lifelong Exercise

Shibata S, Fujimoto N, Hastings JL, et al. The effect of lifelong exercise frequency on arterial stiffness. *J Physiol*. 0(0). doi: 10.1113/JP275301

Healthy Lifestyle Habits

Li Y, et al. Impact of healthy lifestyle factors on life expectancies in the US population. *Circulation*. 2018. doi.org/10.1161/CIRCULATIONAHA.117.032047

Healthy Food Choices Start in the Brain

Schmidt L, Tusche A, Manoharan N, Hutcherson C, Hare T, Plassmann H. Neuroanatomy of the vmPFC and dlPFC predicts individual differences in cognitive regulation during dietary self-control across regulation strategies. *J Neurosci*. June 2018;3402-3417. doi:10.1523/JNEUROSCI.3402-17.2018

Benefits of Yoga for Kids

1. Amit K, Neelam S. Effect of yoga on academic performance in relation to stress. *Int J Yoga*. 2009 Jan-Jun; 2(1): 39–43.

2. Bazzano AN, Anderson CE, Hylton C, et al. Effect of mindfulness and yoga on quality of life for elementary school students and teachers: results of a randomized controlled school-based study. *Psychol Res Behav Manag*. 2018 Apr 10; 11: 81-89.
3. Butzer B, LoRusso AM, Windsor R, et al. A Qualitative Examination of Yoga for Middle School Adolescents. *Adv Sch Ment Health Promot*. 2017; 10(3):195-219.
4. Sarkissian M, Trent NL, Huchting K, et al. Effects of a Kundalini Yoga Program on Elementary and Middle School Students' Stress, Affect, and Resilience. *J Dev Behav Pediatr*. 2018 Apr; 39(3):210-216.
5. Weaver LL, Darragh AR. Systematic Review of Yoga Interventions for Anxiety Reduction Among Children and Adolescents. *Am J Occup Ther*. 2015 Nov-Dec; 69(6): 6906180070p1-9.
6. Cohen SCL, Harvey DJ, Shields RH, et al. Effects of Yoga on Attention, Impulsivity, and Hyperactivity in Preschool-Aged Children with Attention-Deficit Hyperactivity Disorder Symptoms. *J Dev Behav Pediatr*. 2018 Apr; 39(3):200-209.

Vitamin D and Visceral Fat

1. Dalgard C, et al. Vitamin D status in relation to glucose metabolism and type 2 diabetes in septuagenarians. *Diabetes Care*. 2011;34(6):1284-1288.
2. Rafiq R, et al. Associations of different body fat deposits with serum 25-hydroxyvitamin D concentrations. *Endocrine Abstracts*. 2018;56. DOI: 10.1530/endoabs.56.OC6.5
3. Forrest K. and Stuhldreher W. Prevalence and correlates of vitamin D deficiency in US adults. *Nutrition Research*. 2011;31(1):48-54.

Exercise Impacts Labor Outcomes

Sanda B, Vistad I, Sagedal LR, Haakstad LAH, Lohne-Seiler H, Torstveit MK. What is the effect of physical activity on duration and mode of delivery? Secondary analysis from the Norwegian Fit for Delivery trial. *Acta Obstet Gynecol Scand.* 0(0). doi:10.1111/aogs.13351

Isometric Yoga to Reduce Fatigue

1. Oka T, Tanahashi T, Sudo N, et al. Changes in fatigue, autonomic functions, and blood biomarkers due to sitting isometric yoga in patients with chronic fatigue syndrome. *Biopsychosoc Med.* 2018 Apr 10;12:3.
2. Oka T, Wakita H, Kimura K. Development of a recumbent isometric yoga program for patients with severe chronic fatigue syndrome/myalgic encephalomyelitis: A pilot study to assess feasibility and efficacy. *Biopsychosoc Med.* 2017 Mar 3;11:5.
3. Oka T, Tanahashi T, Chijiwa T, et al. Isometric yoga improves the fatigue and pain of patients with chronic fatigue syndrome who are resistant to conventional therapy: a randomized, controlled trial. *Biopsychosoc Med.* 2014 Dec 11;8(1):27.

Essential Oils Support the Cardiovascular System

de Andrade TU, Brasil GA, Endringer DC et al. Cardiovascular Activity of the Chemical Constituents of Essential Oils. *Molecules.* 2017 Sep 17;22(9). pii: E1539. doi: 10.3390/molecules22091539.

Sleep and Sugar Intake

1. Al Khatib H, et al. Sleep extension is a feasible lifestyle intervention in free-living adults who are habitually short sleepers: a potential strategy for decreasing intake of free sugars? A randomized controlled pilot study. *The American Journal of Clinical Nutrition.* 2018;107(1):43-53.

-
2. Greer S, Goldstein A, and Walker M. The impact of sleep deprivation on food desire in the human brain. *Nature Communications*. 2013;4. doi:10.1038/ncomms3259.

Zero-Calorie Sweeteners and Weight Management

1. Kundu N, et al. Artificial sweetener such as sucralose may promote inflammation in human subcutaneous fat-derived mesenchymal stromal cells (MSCs). *ENDO*. 2018; Abstract SUN-071.
2. Hassan M. Low intake of aspartame induced weight gain and damage of brain & liver cells in weanling Syrian hamsters. *Journal of Food and Nutrition Research*. 2016; 4(3):152-156.
3. de Matos Feijo F, et al. Saccharin and aspartame, compared with sucrose, induce greater weight gain in adult Wistar rats, at similar total caloric intake levels. *Appetite*. 2013; 60(1): 203-207.

Household Cleaning and Respiratory Health

1. Quirce S, Barranco P. Cleaning agents and asthma. *J Investig Allergol Clin Immunol*. 2010;20(7):542-50.
2. Svanes Ø, Bertelsen RJ, Lygre SH, et al. Cleaning at Home and at Work in Relation to Lung Function Decline and Airway Obstruction. *Am J Respir Crit Care Med*. 2018.
3. Campana R, Casettari L, Fagioli L, Cespi M, Bonacucina G, Baffone W. Activity of essential oil-based microemulsions against *Staphylococcus aureus* biofilms developed on stainless steel surface in different culture media and growth conditions. *Int J Food Microbiol*. 2017;241:132-140.

Eggs and Health Myths

1. Berge L, F A. How the Ideology of Low Fat Conquered America. *J Hist Med Allied Sci*. 2008;63(2):139-177. doi:

10.1093/jhmas/jrn001

2. Fuller NR, Sainsbury A, Caterson ID, et al. Effect of a high-egg diet on cardiometabolic risk factors in people with type 2 diabetes: the Diabetes and Egg (DIABEGG) Study—randomized weight-loss and follow-up phase. *Am J Clin Nutr.* doi:10.1093/ajcn/nqy048

Physical Fitness in Children

Birat A, Bourdier P, Piponnier E, Blazevich AJ, Maciejewski H, Duché P and Ratel S (2018) Metabolic and Fatigue Profiles Are Comparable Between Prepubertal Children and Well-Trained Adult Endurance Athletes. *Front. Physiol.* 9:387. doi: 10.3389/fphys.2018.00387

Smartphones and Mental Health

1. Kouider, S., Long, B., Le Stanc, L., Charron, S., Fievet, A.-C., Barbosa, L. S., & Gelskov, S. V. (2015). Neural dynamics of prediction and surprise in infants. *Nature Communications*, 6, 8537. <http://dx.doi.org/10.1038/ncomms9537>
2. Roelofs, K. (2017). Freeze for action: Neurobiological mechanisms in animal and human freezing. *Philosophical Transactions of the Royal Society B*, 372(1718), 20160206. <http://dx.doi.org/10.1098/rstb.2016.0206>
3. Mikulic, M. (2016). The effects of push vs. pull notifications on overall smartphone usage, frequency of usage and stress levels (Dissertation). Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:uu:diva-297091>
4. Grinols, A. B. & Rajesh, R. (2014). Multitasking with smartphones in the college classroom. *Business and Professional Communication Quarterly*, 77(1), 89–95. <http://dx.doi.org/10.1177/2329490613515300>
5. Peper, E., Harvey, R. (2018) Digital Addiction: Increased

Loneliness, Anxiety, and Depression. NeuroRegulation. 2018;5(1):3.

Impact of Poor Air Quality

1. Pope CA, Burnett RT, Thurston GD, et al. Cardiovascular mortality and long-term exposure to particulate air pollution: epidemiological evidence of general pathophysiological pathways of disease. *Circulation*. 2004;109(1):71-77. doi: 10.1161/01.CIR.0000108927.80044.7F
2. Jayaraj RL, Rodriguez EA, Wang Y, Block ML. Outdoor Ambient Air Pollution and Neurodegenerative Diseases: the Neuroinflammation Hypothesis. *Curr Environ Health Rep*. 2017;4(2):166-179. doi:10.1007/s40572-017-0142-3
3. Ljubimova JY, Braubach O, Patil R, et al. Coarse particulate matter (PM 2.5–10) in Los Angeles Basin air induces expression of inflammation and cancer biomarkers in rat brains. *Sci Rep*. 2018;8(1):5708. doi:10.1038/s41598-018-23885-3

Living a Life of Health and Vitality

1. Murray C, et al. The State of US Health, 1990-2010 Burden of Diseases, Injuries, and Risk Factors. *JAMA*. 2013;310(6): 591-606.
2. Centers for Disease Control. National Health and Nutrition Examination Survey (NHANES), 2009-2010. Retrieved from: <https://www.healthdata.gov/dataset/national-health-and-nutrition-examination-survey-nhanes-2009-2010>
3. Centers for Disease Control. National Center for Health Statistics. Retrieved from: <https://www.cdc.gov/nchs/fastats/diet.htm>
4. Misner B. Food alone may not provide sufficient micronutrients for preventing deficiency. *Journal of the International Society of Sports Nutrition*. 2006;3(1):51-55.

5. Simopoulos A. An increase in the omega-6/omega-3 fatty acid ratio increases the risk for obesity. *Nutrients*. 2016;8(3):128.
6. Han X., Eggett D., and Parker T. Evaluation of the health benefits of a multivitamin, multimineral, herbal, essential oil-infused supplement: A pilot trial. *Journal of Dietary Supplements*. 2018;15(2). doi.org/10.1080/19390211.2017.1331943.
7. Bird J, Ciappio E, and Murphy R. Adult full spectrum multivitamin/multimineral supplement users have a lower prevalence of vitamin and mineral deficiencies. *The FASEB Journal*. 2015;29(1).
8. Dickinson A., MacKay D., and Wong A. Consumer attitudes about the role of multivitamins and other dietary supplements: report of a survey. *Nutrition Journal*. 2015;16:66.

Sleep Cycle and Life Expectancy

1. Kristen L. Knutson & Malcolm von Schantz (2018) Associations between chronotype, morbidity and mortality in the UK Biobank cohort, *Chronobiology International*, DOI: 10.1080/07420528.2018.1454458
2. Reutrakul S, Knutson KL. 2015. Consequences of circadian disruption on cardiometabolic health. *Sleep Med Clin*. 10:455–68. doi:10.1016/j.jsmc.2015.07.005.
3. Yu JH, Yun CH, Ahn JH, Suh S, Cho HJ, Lee SK, Yoo HJ, Seo JA, Kim SG, Choi KM, et al. 2015. Evening chronotype is associated with metabolic disorders and body composition in middle-aged adults. *J Clin Endocrinol Metab*. 100:1494–502. doi:10.1210/jc.2014-3754.
4. Koopman ADM, Rauh SP, Van T, Riet E, Groeneveld L, Van Der Heijden AA, Elders PJ, Dekker JM, Nijpels GBeulens JW, et

- al. 2017. The association between social jetlag, the metabolic syndrome, and type 2 diabetes mellitus in the general population: the new hoorn study. *J Biol Rhythms*. 32(4):359–368. doi:10.1080/748730417713572.
5. Patterson F, Malone SK, Grandner MA, Lozano A, Perkett M , Hanlon A. 2017. Interactive effects of sleep duration and morning/evening preference on cardiovascular risk factors. *Eur J Public Health*.28(1):155–161.

Effects of Caloric Restriction on Overall Health

Ravussin E, et al. A 2-year randomized controlled trial of human caloric restriction: Feasibility and effects on predictors of health span and longevity. *The Journals of Gerontology*. 2015;9(1): 1097-1104.

Eating Slowly

1. Hurst Y. and Fukuda H. Effects of changes in eating speed on obesity in patients with diabetes: a secondary analysis of longitudinal health check-up data. *BMJ Open*. 2018;8. e019589. doi: 10.1136/bmjopen-2017-019589.
2. Ashizawa E , Katano S , Harada A , et al . Exploring the link between standard lifestyle questionnaires administered during specific medical check-ups and incidence of metabolic syndrome in Chiba Prefecture. *Nihon Koshu Eisei Zasshi*. 2014;61:176–85.
3. Zhu B , Haruyama Y , Muto T , et al . Association between eating speed and metabolic syndrome in a three-year population-based cohort study. *J Epidemiol*. 2015;25:332–6.doi:10.2188/jea.JE20140131.
4. Totsuka K , Maeno T , Saito K , et al . Self-reported fast eating is a potent predictor of development of impaired glucose tolerance in Japanese men and women: Tsukuba

- Medical Center Study. *Diabetes Res Clin Pract.* 2011;94:e72–4.doi:10.1016/j.diabres.2011.08.015.
5. Otsuka R , Tamakoshi K , Yatsuya H , et al . Eating fast leads to insulin resistance: findings in middle-aged Japanese men and women. *Prev Med.*2008;46:154–9.doi:10.1016/j.ypmed.2007.07.031.
 6. Sakurai M, Nakamura K , Miura K , et al. Self-reported speed of eating and 7-year risk of type 2 diabetes mellitus in middle-aged Japanese men. *Metabolism.* 2012;61:1566–71.doi:10.1016/j.metabol.2012.04.005.
 7. Ochiai H , Shirasawa T , Ohtsu T , et al . The impact of eating quickly on anthropometric variables among schoolgirls: a prospective cohort study in Japan. *Eur J Public Health.* 2014;24:691–5.doi:10.1093/eurpub/ckt120

Cognitive Function and Yoga

1. Luu K. and Hall P. Examining the acute effects of Hatha Yoga and mindfulness meditation on executive function and mood. *Mindfulness.* 2017;8:873-880.
2. Brown R, et al. Sudarshan Kriya yogic breathing in the treatment of stress, anxiety, and depression. *Journal of Alternative and Complementary Medicine.* 2005;11(1): 189-201
3. Khalsa S. Yoga as a therapeutic intervention: A bibliometric analysis of published research studies. *Indian Journal of Physiology and Pharmacology.* 2004;48(3):269-285.
4. Woodyard C. Exploring the therapeutic effects of yoga and its ability to increase quality of life. *International Journal of Yoga.* 2011;4(2):49-54.

You Can't Out-Train a Bad Diet

1. The GBD Obesity Collaborators. Health effects of overweight and obesity in 195 countries over 25 years. *The New*

England Journal of Medicine. 2017. DOI: 10.1056/
NEJMoa1614362

2. Pontzer H, et al. Constrained total energy expenditure and metabolic adaptation to physical activity in adult humans. Current Biology. 2016;26(3):410-417.

Helping Teens Maintain Clear Skin

1. Kapoor S, Saraf S. Topical herbal therapies an alternative and complementary choice to combat acne. Res J Med Plant. 2011;5(6):650-669.
2. Bassett IM, Pannowitz DL, Barnetson RS. A comparative study of tea-tree oil versus benzoylperoxide in the treatment of acne. Med J Aust. 1990; 153(8):455-458.
3. Raman A, Weir U, Bloomfield SF. Antimicrobial effets of tea-tree oil and its major components on *Staphylococcus aureus*, Staph. epidermidis, and *Propionibacterium acnes*. Lett Appl Microbiol. 1995; 21(4):242-245.
4. Decker A, Gruber EM. Over-the-counter Acne Treatments: A Review. J Clin Aesthet Dermatol. 2012;5(5):32-40.
5. Enshaieh S, Jooya A, Sladat AH, et al. The efficacy of 5% topical tea tree oil gel in mild to moderate acne vulgaris: A randomized, double-blind placebo-controlled study. Indian J Dermatol. 2007; 73(1): 22-25.

Overeating and the Brain

1. Zhang X. and van den Pol A. Rapid binge-like eating and body weight gain driven by zona incerta GABA neuron activation. Science. 2017;356(6340):853-859.
2. Shen J, et al. Olfactory stimulation with scent of grapefruit oil affects autonomic nerves, lipolysis and appetite in rats. Neuroscience Letters. 2005;380(3):289-294.
3. Shen J, et al. Mechanism of changes induced in plasma glycerol by scent stimulation with grapefruit and lavender

essential oils. *Neuroscience Letters*. 2007;416:241-246.

What We Eat vs. How We Feel

Jacka F, et al. A randomised controlled trial of dietary improvement for adults with major depression (the ‘SMILES’ trial). *BMC Medicine*. 2017;15(23). DOI: 10.1186/s12916-017-0791-y

Bone Health and Exercise

1. Layne J. and Nelson M. The effects of progressive resistance training on bone density: a review. *Medicine & Science in Sports & Exercise*. 1999; 31(1):25-30.
2. Styner M, et al. Exercises decreases marrow adipose tissue through β -oxidation in obese running mice. *Journal of Bone Mineral Research*. 2017. doi: 10.1002/jbmr.3159.

Energy-Dense Food and Weight Gain

Tordoff M, Pearson J, Ellis H, Poole R. Does good-tasting food influence body weight? *Physiology of Human Behavior*. 2017;170:27-31.

Omega-3 Fatty Acids from Plants

Amjad Khan W, Chun-Mei H, Khan N, et al. Bioengineered Plants Can Be a Useful Source of Omega-3 Fatty Acids. *Biomed Res Int*. 2017;7348919. doi: 10.1155/2017/7348919

The Key to Strength May Not Be Your Muscles

1. Morton R, et al. Neither load nor systemic hormones determine resistance training-mediated hypertrophy or strength gains in resistance-trained young men. *Journal of Applied Physiology*. 2016. DOI: 10.1152/japplphysiol.00154.2016.
2. Jenkins, N, et al. Greater Neural Adaptations following High-

vs. Low-Load Resistance Training. *Frontiers in Physiology*. 2017. DOI: 10.3389/fphys.2017.00331

Skin Care Routine

1. Irkin R, Korukluoglu M. Growth inhibition of pathogenic bacteria and some yeasts by selected essential oils and survival of *L. monocytogenes* and *C. albicans* in apple-carrot juice. *Foodborne Pathog Dis*. 2009;6(3):387-394.
2. Matiz G, Osorio MR, Camacho F, Atencia M, Herazo J. Effectiveness of antimicrobial formulations for acne based on orange (*Citrus sinensis*) and sweet basil (*Ocimum basilicum* L) essential oils. *Biomedica*. 2012;32(1):125-133.
3. Hwang E, Ngo HTT, Park B et al. Myrcene, An Aromatic Volatile Compound, Ameliorates Human Skin Extrinsic Aging via Regulation of MMPs Production. *Am J Chin Med*. 2017 Jun 28:1-12.
4. Muthaiyan A, Martin EM, Natesan S, Crandall PG, Wilkinson BJ, Ricke SC. Antimicrobial Effect and Mode of Action of Terpeneless Cold Pressed Valencia Orange Essential Oil on Methicillin Resistant *Staphylococcus Aureus*. *Journal of Applied Microbiology*. 2012; 112(5):1020-1033.
5. Li H, Ge Y, Luo Z et al. Evaluation of the chemical composition, antioxidant and anti-inflammatory activities of distillate and residue fractions of sweet basil essential oil. *J Food Sci Technol*. 2017 Jun;54(7):1882-1890.
6. Dennen M, Lio P. Smoothing Out Our Understanding of Moisturizers. *Practical Dermatology*. 2017 Jun 14(6):68-72.
7. Wei J, Zhang X, Bi Y, Miao R, Zhang Z, Su H. Anti-Inflammatory Effects of Cumin Essential Oil by Blocking JNK, ERK and NF- κ B signaling Pathways in LPS-Stimulated RAW 264.7 Cells. *Evidence- Based Complementary and Alternative Medicine*. 2015.
8. Van Vuuren SF, Suliman S, Viljoen AM. The antimicrobial activity of four commercial essential oils in combination with

- conventional antimicrobials. *Lett Appl Microbiol.* 2009;28(4): 440-446.
9. Enshaieh S, Jooya A, Siadat AH, Iraji F. The efficacy of 5% topical tea tree oil gel in mild to moderate acne vulgaris: a randomized, double blind placebo controlled study. *Indian Journal of Dermatology, Venereology and Leprology.* 2007;73:22-25.
 10. Decker A, Graber EM. Over the counter Acne Treatments: A Review. *J Clin Aesthet Dermatol.* 2012;5(5):32-40.
 11. Yang SA, Jeon SK, Lee EJ, et al. Comparative study of the chemical composition and antioxidant activity of six essential oils and their components. *Nat Prod Res.* 2010;24(2): 140-151.
 12. Amorati R, Foti MC, Valgimigli L. Antioxidant Activity of Essential Oils: a Critical Review. *J Agric Food Chem.* 2013;61(46):10835-10847.
 13. Kamal GM, Ashraf MY, Hussain AI, et al. Antioxidant Potential of Peel Essential Oils of Three Pakistani Citrus Species: *Citrus reticulata*, *Citrus sinensis* and *Citrus paradisi*. *Pakistant Journal of Botany.* 2013;45(4): 1449-1454.

Gut Microbiome Health

1. Shreiner A, et al. The gut microbiome in health and in disease. *Current Opinions in Gaastroenterology.* 2015;31(1): 69-75.
2. Kumar M, et al. Human gut microbiota and healthy aging: Recent developments and future prospective. *Nutrition and Healthy Aging.* 2016;4(1):3-16.
3. Mayer E, et al. Gut Microbes and the brain: Paradigm shift and neuroscience. *The Journal of Neuroscience.* 2014; 34(46):15490-15496.
4. Clarke S, et al. The gut microbiota and its relationship to diet and obesity. *Gut Microbes.* 2012;3(3):186-202.

5. Hjorth M, et al. Pre-treatment microbial Prevotella-to-Bacteroides ratio, determines body fat loss success during a 6-month randomized controlled diet intervention. *International Journal of Obesity (London)*. 2017. doi: 10.1038/ijo.2017.220.

Ancestry and Your Health

Ye K, et al. Dietary adaptation of FADS genes in Europe varied across time and geography. *Nature Ecology & Evolution*. 2017. doi: <https://doi.org/10.1101/111229>.

Cinnamon and Metabolism

1. Brenneman M, Mahfouz T, and Stockert A. Cooperative binding of cinnamon polyphenols as activators of Sirtuin-1 protein in the insulin signaling pathway. *The FASEB Journal*. 2017;31(1):761.25.
2. Hoehn A and Stockert A. The effects of Cinnamomum cassia on blood glucose values are greater than those of dietary changes alone. *Nutrition and Metabolic Insights*. 2012;5:77-83.

Magnesium and Bone Health

1. Chu, W. Magnesium may promote bone health and prevent fractures: Study. *European Journal of Epidemiology*. 2017. DOI: 10.1007/s10654-017-0242-2.
2. Sojka, JE, Weaver CM. Magnesium supplementation and osteoporosis. *PubMed*. 1995; 53(3):71-4.

Gym Membership

1. Statistic Brain. Gym membership statistics. 2016. Retrieved from: <http://www.statisticbrain.com/gym-membership->

- statistics/.
2. Schroeder E, et al. Associations of Health Club Membership with physical activity and cardiovascular health. PLOS ONE. 2017;12(1): e0170471.

Omega-6/Omega-3 Fatty Acids and Obesity

Simopoulos A. An increase in the omega-6/omega-3 fatty acid ratio increases the risk for obesity. Nutrients. 2016;8(128). doi: 10.3390/nu8030128

Morning Workout Appetite Cues

Hanlon B, Larson M, Bailey B, LeCheminant J. Neural response to pictures of food after exercise in normal-weight and obese women. Medicine & Science in Sports & Exercise. 2012;44(10): 1864-1870.

Smart, but Risky, Phones

Rebold M, et al. The impact of different cell phone functions and their effects on postural stability. Performance Enhancement & Health. 2016. <http://dx.doi.org/10.1016/j.peh.2016.11.004>.

Overeating "Healthy" Foods

Faulkner G, et al. Perceived 'healthiness' of foods can influence consumers' estimations of energy density and appropriate portion size. International Journal of Obesity. 2014;38(1):106-112.

Eating Out, Eating More

1. Jamrisko M. Americans spend more on dining out than groceries for first time ever. Bloomberg. April 14, 2015. Retrieved from: <https://www.bloomberg.com/news/articles/2015-04-14/americans-spending-on-dining-out-just-overtook-grocery-sales-for-the-first-time-ever>

2. Nguyen B, Powell L. The impact of restaurant consumption among U.S. adults: effects on energy and nutrient intakes. *Public Health Nutrition*. 2014; 17(11):2445-2452.

Filling Up with H₂O

Parretti H, et al. Efficacy of water preloading before main meals as a strategy for weight loss in primary care patients with obesity: RCT. *Obesity*. 2015; 23(9):1785-1791.

Impulsivity and BMI

Filbey F, Yezhuvath U. A multimodal study of impulsivity and body weight: Integrating behavioral, cognitive, and neuroimaging approaches. *Obesity*. 2017;25(1):147-154.

Eat the Rainbow

Otto M, Padhye N, Bertoni A, Jacobs D, Mozaffarian D. Everything in moderation – Dietary diversity and quality, central obesity and risk of diabetes. *PLOS ONE*. 2015. doi.org/10.1371/journal.pone.0141341.

High Sugar Diet & Lifespan

1. Dobson A, et al. Nutritional programming of lifespan by FOXO inhibition on sugar diets. *Cell Reports*. 2017;18:299-306
2. Wilcox B, et al. FOXO3A genotype is strongly associated with human longevity. *Proceedings of the National Academy of Sciences of the United States of America*. 2008;106(8): 2700–5.

Sugary Sickness

Sanguesa G, et al. Type of supplemented simple sugar, not merely calorie intake, determines adverse effects on metabolism and aortic function in female rats. *American Journal of Physiology*

– Heart and Circulatory Physiology. 2016. doi: 10.1152/ajpheart.00339.2016.

Waking up with Light

Cheung I, et al. Morning and evening blue-enriched light exposure alters metabolic function in normal weight adults. PLOS ONE. 2016. <http://dx.doi.org/10.1371/journal.pone.0155601>.

Exercise Is Not a Cure-All

Brown R. et al. Secular differences in the association between caloric intake, macronutrient intake, and physical activity with obesity. Obesity Research & Clinical Practice. 2015. DOI: 10.1016/j.orcp.2015.08.007.

Sleep Patterns and Homeostatic Hunger Mechanisms

1. Lundahl A, Nelson T. Sleep and food intake: A multisystem review of mechanisms in children and adults. Journal of Health Psychology. 2015;20(6):794-805.
2. Schussler P, et al. Peptide hormones regulating appetite—focus on neuroimaging studies in humans. Diabetes/Metabolism Research and Reviews. 2006;27(2):104-112.

Support vs. Competition

1. Foster D, Linehan C, Kirman S, Lawson G, James G. Motivating physical activity at work: using persuasive social media for competitive step counting. ACM. 2010: 111-16.
2. Zhang J, et al. Support or competition? How online social networks increase physical activity: A randomized controlled trial. Preventive Medicine Reports. 2016;4:453-458.

Nutrient-Dense Foods and Lifespan

1. Lee C, Longbo V. Dietary restriction with and without caloric

- restriction for healthy aging. F100 Research. 2016. doi: 10.12688/f1000research.7136.1.
2. Mattison J, et al. Caloric restriction improves health and survival of rhesus monkeys. Nature Communications. 2017. doi:10.1038/ncomms14063.

Building Muscle in Old Age

Walker S, Hakkinen K. Similar increases in strength after short-term resistance training due to different neuromuscular adaptations in young and older men. Journal of Strength and Conditioning Research. 2014; 28(11):3041-3048.

Mindful Meditation

Hoge E, et al. The effect of mindfulness meditation training on biological acute stress responses in generalized anxiety disorder. Psychiatry Research. 2017. DOI: <http://dx.doi.org/10.1016/j.psychres.2017.01.006>.

Don't Forget to Eat Your Quercetin and Galangin

1. Liu X, et al. Dietary total flavonoids intake and risk of mortality from all causes and cardiovascular disease in the general population: a systematic review and meta-analysis of cohort studies. Molecular Nutrition & Food Research. DOI: 10.1002/mnfr.201601003.
2. Liu y, et al., Dietary flavonoids intake and risk of type 2 diabetes: a meta-analysis of prospective cohort studies. Clinical Nutrition. 2014; 33:59-63.
3. Gharib H, et al. American Association of Clinical Endocrinologists, American College of Endocrinology, and Associazione Medici Endocrinologi Medical Guidelines for Clinical Practice for the Diagnosis and Management of Thyroid Nodules - 2016 Update. Endocrine Practice. 2016:

22:622-639.

Music and Exercise

1. Hasan M, Bakhtiyar T, Azhdar A. The effects of music on the perceived exertion rate and performance of trained and untrained individuals during progressive exercise. *Facta universitatis - series: Physical Education and Sport.* 2008; 6(1):67-74.
2. Kapingst A, et al. Effect of music components on exercise. *Cardiopulmonary Rehabilitation.* 2010;30:272.
3. Prieboy M. Effects of auditory input on perceived exertion during cycling. *Cardiopulmonary Rehabilitation.* 2009; 29(4); 262-274.
4. Atan T. Effect of music on anaerobic exercise performance. *Biology of Sport.*2013; 30(1):35-39.

Exercise and Biological Aging

Shadyab A, et al. Associations of accelerometer – measured and self-reported sedentary time with leukocyte telomere length in older women. *American Journal of Epidemiology.* 2017: 172-184. DOI: <https://doi.org/10.1093/aje/kww196>.

The Dangers of Yo-Yo Dieting

Rasla, S. Yo-yo dieting dangerous even if not overweight. *American Heart Association Scientific Sessions.* 2016. Retrieved from: <http://news.heart.org/scientific-sessions-2016-summary/>.

Exercise and Laughter

Greene C, Morgan J, Traywick L, Mingo C. Evaluation of a laughter-based exercise on health and self-efficacy for exercise. *The Gerontologist.* 2016. DOI: 10.1093/geront/gnw105.

Exercise May Keep Your Brain Young

Zhu, W, et al. Objectively measured physical activity and cognitive function in older adults. *Medicine & Science in Sports & Exercise.* 2017;49(1):47-53.

Weighing in on Health

Matheson E, King D, Everett C. Healthy lifestyle habits and mortality in overweight and obese individuals. *Journal of the American Board of Family Medicine.* 2012; 25(1):9-15.

Core Strength 101

1. Martuscello J, Nuzzo J, Ashley C, Campbell B, Orriola J, Mayer J. Systematic review of core muscle activity during physical fitness exercises. *Journal of Strength & Conditioning Research.* 2013; 27(6):1684-1698.
2. Escamilla R. et al. Core muscle activation during swiss ball and traditional abdominal exercises. *Journal of Orthopaedic & Sports Physical Therapy.* 2010;40:265-276.
3. Schoenfeld B, Contreras B, Tiryaki-Sonmez R, Fontana F. An electromyographic comparison of a modified version of the plank with a long lever and posterior tilt versus the traditional plank exercise. *Sports Biomechanics.* 2014;13(3): 296-306.
4. Calatayud J, et al. Muscle activation during push-ups with different suspension training systems. *Journal of Sports Science & Medicine.* 2014; 13(3):502-510.
5. Youdas J, et al. Comparison of muscle-activation patterns during the conventional push-up and perfect pushup™ exercises. *Journal of Strength and Conditioning Research.* 2010;24:3352-3362.

Exhaling Fat

1. Meerman R, Brown A. When somebody loses weight, where does the fat go? *BMJ*. 2014; 349:g7257.
2. Ainsworth B, et al. Compendium of physical activities: a second update of codes and MET values. *Med Sci Sports Exerc*. 2011;43:1575-81.

Dieting May Improve Mood and Overall Quality of Life

Marti C, Bhapkar M, Pittas A. Effect of calorie restriction on mood, quality of life, and sexual function in healthy nonobese adults. *JAMA Intern Med*. 2016; 176(6):743-752

Slim by Design: Designing a Healthy Food Environment

Wansink B, Hanks A, Kaipainen K. Slim by design: Kitchen counter correlates of obesity. *Health Education Behavior*. 2016; 43(5):552-558.

The Hormone Leptin and Weight Loss

1. Maffei M. Leptin levels in human and rodent: Measurement of plasma leptin and ob RNA in obese and weight-reduced subjects. *Nature Medicine*. 1995; 1:1155-1161.
2. Woods S. The control of food intake: Behavioral versus molecular perspectives. *Cellular Metabolism*. 2009; 9(6): 489-498.
3. Jung C, Kim M. Molecular mechanism of central leptin resistance in obesity. *Arch Pharm Res*. 2013; 36(2):201-207.
4. Wing R, Sinha M, Considine R, Lang W, Caro J. Relationship between weight loss maintenance and changes in serum leptin levels. *Horm Metab Res*. 1996; 28(12): 698-703.
5. Chu N, Stampfer M, Spiegelman D, Rifai N, Hotamisligil G, Rimm E. Dietary and lifestyle factors in relation to plasma leptin concentrations among normal weight and overweight

men. Int J Obes Relat Metab Disord. 2001; 25(1): 106-114.

Dieting and Weight Gain

Lowe M, Doshi S, Katterman S, Feig M. Dieting and restrained eating as prospective predictors of weight gain. Frontiers in Psychology. 2013;4:577.

Cross-Training and Carbohydrate Intake

Escobar K, Morales J, Vandusseldorp T. The effect of a moderately low and high carbohydrate intake on crossfit performance. International Journal of Exercise Science. 2016;9(3):460-470.

Health Impacts of Work Commuting

Hoehner C, Barlow C, Allen P, Shootman M. Commuting distance, cardiorespiratory fitness, and metabolic risk. American Journal of Preventive Medicine. 2013; 42(6):571-578.

Exercising for Pleasure

Zenko Z, Ekkekakis P, Ariely D. Can you have vigorous exercise and enjoy it too? Ramping intensity down increases postexercise, remembered, and forecasted pleasure. Journal of Sport & Exercise Physiology. 2016;38(2):149-159.

Breakfast

1. Mayyasi A. How breakfast became a thing. Priceconomics. May 9, 2016. Retrieved from <https://priceconomics.com/how-breakfast-became-a-thing>
2. Dhurandhar E, et al. The effectiveness of breakfast recommendations on weight loss: a randomized controlled trial. The American Journal of Clinical Nutrition. 2014;104(4). doi: 10.3945/ajcn.114.089573.
3. Levitsky D, Pacanowski C. Effect of skipping breakfast on subsequent energy intake. Physiology & Behavior.

2013;119:9-16.

4. Betts J, Richardson J, Chowdhury E, Holman G, Tsintzas K, Thompson D. The causal role of breakfast in energy balance and health: a randomized controlled trial in lean adults. *The American Journal of Clinical Nutrition*. 2014. doi: 10.3945/ajcn.114.083402.

Sleep Deprivation and Junk Food

Greer S, Goldstein A, Walker M. The impact of sleep deprivation on food desire in the human brain. *Nature Communications*. 2013; 4:2259. doi:10.1038/ncomms3259

Planning for Weight Management Success

1. Swinburn B, Egger G, Raza F. Dissecting obesogenic environments: the development and application of a framework for identifying and prioritizing environmental interventions for obesity. *Prev Med*. 1999;29:563–70.
2. Louzada M, et al. Consumption of ultra-processed foods and obesity in Brazilian adolescents and adults. *Prev Med*. 2015;81:9-15.
3. Fruh S, et al. Meal-planning practices with individuals in health disparity zip codes. *J Nurse Pract*. 2013;9(6):344-349.
4. Hollis J, et al. Weight loss during the intensive intervention phase of weight-loss maintenance trial. *American Journal of Preventive Medicine*. 2008;35(2):118-126.
5. Deliens T, Clarys P, De Bourdeaudhuij I, Deforche B. Determinants of eating behaviour in university students: a qualitative study using focus group discussions. *BMC Public Health*. 2014;14:53.
6. Sumithran P. Long-term persistence of hormonal adaptations to weight loss. *The New England Journal of Medicine*. 2011;365:1597-1604.
7. King A, et al. Behavioral impacts of sequentially versus simultaneously delivered dietary plus physical activity

interventions: The CALM Trial. Annals of Behavioral Medicine. 2013; 46(2):157-168.

Sleep: Lavender & L-Theanine

1. Chong Y, Fryar C, Gu Q. Prescription sleep aid use among adults: United States, 2005-2010. NCHS Data Brief. August 2013; 127. Retrieved from: <http://www.cdc.gov/nchs/data/databriefs/db127.pdf>
2. Afshar M, et al. Lavender fragrance essential oil and the quality of sleep in postpartum women. Iran Red Crescent Med J. 2015; 17(4):e25880.
3. Lee S. Effects of aroma inhalation on fatigue and sleep quality of postpartum mothers. Women Heath Nurs. 2004; 10(3):235-243.
4. Hirokawa K, Nishimoto T, Taniguchi T. The effects of lavender aroma on sleep quality in healthy Japanese students. Percept Mot Skills. 2012; 114(1):111-122.
5. Field T, et al. Lavender bath oil reduces stress and crying and enhances sleep in very young infants. Early Human Development. 2008; 84(6):339-401.
6. Smith A, Halcon L, Savik K, Reis R. Effect of lavender and sleep hygiene on self-reported sleep issues: A randomized controlled trial. J Am Coll Nutri. 2015; 34(5):436-47.
7. Schuwald A, Noldner M, Wilmes T, Klugbauer N, Leuner K, Muller W. Lavender oil-potent anxiolytic properties via modulation voltage dependent calcium channels. PLoS One. 2013; 8(4):e59998.
8. Dimpfel W, Pischel I, Lehnfeld R. Effects of lozenge containing lavender oil, extracts from hops, lemon balm and oat on electrical brain activity in volunteers. Eur. J. Med. Res. 2004; 9(9):423-431.
9. Ghelardini C, Galeotti N, Salvatore G, Mazzanti G. Local anesthetic activity of the essential oil of *Lavandula angustifolia*. Planta Med. 1999; 65(8):700-703.

10. Barrett J, Tracy D, Giaroli G. To sleep or not to sleep: a systematic review of the literature of pharmacological treatments of insomnia in children and adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol.* 2013; 23(10):640-7.
11. Lyon M, Kapoor M, Juneja L. The effects of L-theanine on objective sleep quality in boys with attention deficit hyperactivity disorder (ADHD): a randomized, double-blind, placebo-controlled clinical trial. *Altern Med Rev.* 2011; 16(4): 348-54.
12. Ota M, et al. Effect of L-theanine on glutamatergic functions in patients with schizophrenia. *Acta Neuropsychiatr.* 2015; 27(5):291-6.
13. Yokogoshi H, Kobayashi M, Mochizuki M, Terashima T. Effects of theanine, γ -glutamylethylamide, on brain monoamines and striatal dopamine release in conscious rats. *Neurochem Res.* 1998; 23(5):667-73.

Exercise and Stress Resilience

1. Dum R, Levinthal D, Strick P. Motor, cognitive, and affective areas of the cerebral cortex influence the adrenal medulla. *PNAS.* 2016; 113(35):9922-9927.
2. Hamblin J. Why one neuroscientist started blasting his core. *The Atlantic.* 2016. Accessed September 18, 2016.
3. Childs E, de Wit H. Regular exercise is associated with emotional resilience to acute stress in healthy adults. *Front Physiol.* 2014; 5:161.
4. Nakamura A, Fujiwara S, Matsumoto I, et al. Stress repression in restrained rats by (R)-(-)-linalool inhalation and gene expression profiling of their whole blood cells. *J. Agric. Food Chem.* 2009; 57(12):5480-5485.
5. American Heart Association recommendations for physical activity in adults. American Heart Association. Accessed

September 18, 2016.

Too Much of a Good Thing? When "Healthy" Nutritional Habits Backfire

Du Toit G, Roberts G, Sayre PH, et al. Randomized Trial of Peanut Consumption in Infants at Risk for Peanut Allergy. *N Engl J Med.* 2015;803-813.

Expanding Lifespan

Ristow M, Schmeisser S. Extending life span by increasing oxidative stress. *Free Radic Biol Med.* 2011; 51(2):327-336.

The Importance of Core Strength in Aging

Granacher U, Golhofer A, et al. The importance of trunk muscle strength for balance, functional performance, and fall prevention in seniors: a systematic review. *Sports Med.* 2013; 43(7):627-41.

Prenatal Cravings

Orloff N & Hormes J. Pickles and ice cream! Food cravings in pregnancy: hypothesis, preliminary evidence, and directions for future research. *Front Psych.* 2014; 5(1076):1-39.

Green Exercise

1. Gladwell V, Brown D, Wood C, Sandercock G, Barton J. The great outdoors: how a green exercise environment can benefit all. *Extrem Physiol Med.* 2013; 2:3.
2. Bowler D, Buyung-Ali L, Knight T, Pullin A. A systematic review of evidence for the added benefits to health of exposure to natural environments. *BMC Publ Health.* 2010; 10:456.
3. Pretty J, Peacock J, Sellens M, Griffin M. The mental and physical outcomes of green exercise. *Int J Environ Health Res.* 2005; 15(5):319-337.

4. Moyer A, Rodin J, Grilo C, Cummings N, Larson L, Rebuffé-Scrive M. Stress-induces cortisol response and fat distribution in women. *Obesity Res.* 1994; 2(3):255-262.
5. Thompson Coon J, Boddy K, Stein K, Whear R, Barton J, Depledge MH. Does participating in physical activity in outdoor natural environments have a greater effect on physical and mental wellbeing than physical activity indoors? A systematic review. *Environ Sci Tech.* 2011; 45(5): 1761-1772.

Junk Food and Blood Sugar Regulation

1. Boyle JP, Thompson TJ, Gregg EW, Barker LE, Williamson DF. Projection of the year 2050 burden of diabetes in the US adult population: dynamic modeling of incidence, mortality, and prediabetes prevalence. *Popul Health Metr.* 2010; 8:29.
2. Chichger H, Cleasby ME, Srai SK, Unwin RJ, Debnam ES, Marks J. Experimental type II diabetes and related models of impaired glucose metabolism differentially regulate glucose transporters at the proximal tubule brush border membrane. *Exp Physiol.* 2016;101(6):731-742.

Sugary Drinks and Diabetes

Imamura F, O'Connor L, Ye Z, et al. Consumption of sugar sweetened beverages, artificially sweetened beverages, and fruit juice and incidence of type 2 diabetes: systematic review, meta-analysis, and estimation of population attributable fraction. *Br J Sports Med.* 2016; 50(8); 496-504.

Women and Resistance Training

1. Schmitz K, et al. Strength training and adiposity in premenopausal women: Strong, Healthy, and Empowered study. *American Society for Clinical Nutrition.* 2007; 86(3):

566-572.

2. Mayer F, et al. The intensity and effects of strength training in the elderly. *Dtsch Arztebl Int.* 2011; 108(21): 359-364.
3. Melov S, Tarnopolsky MA, Beckman K, Felkey K, and Hubbard A. Resistance Exercise Reverses Aging in Human Skeletal Muscle. *PLoS One.* 2007; 2(5): e465.
4. Kadi F. The effects of regular strength training on telomere length in human skeletal muscle. *Medicine & Science in Sports & Exercise.* 2008; 40(1): 82-7.
5. O'Connor P, Herring M, and Carvalho A. Mental health benefits of strength training in adults. *American Journal of Lifestyle Medicine.* 2010; 4(5): 377-396.
6. Anderson-Hanley C, Nimon J, and Westen S. Cognitive health benefits of strengthening exercise for community-dwelling older adults. *Journal of Clinical and Experimental Neuropsychology.* 2010; 32(9): 996-1001.
7. van Prag H. Exercise and the brain; something to chew on. *Trends in Neuroscience.* 2009; 32(5): 283-290.

Sarcopenia: Anti-Aging Benefits of Strength Training

1. Forbes G, Reina J. Adult lean body mass declines with age: some longitudinal observations. *Metabolism.* 1970; 19(9): 653-663.
2. Mayer F, et al. The intensity and effects of strength training in the elderly. *Dtsch Arztebl Int.* 2011; 108(21): 359-364.
3. Melov S., Tarnopolsky M.A., Beckman K., Felkey K., and Hubbard A. Resistance Exercise Reverses Aging in Human Skeletal Muscle. *PLoS ONE.* 2007; 2(5): e465.
4. Kadi F. The effects of regular strength training on telomere length in human skeletal muscle. *Medicine & Science in Sports & Exercise.* 2008; 40(1): 82-7.
5. Bolandzadeh N, et al. Resistance training and white matter lesion progression in older woman: Exploratory analysis of a 12-month randomized controlled trial. *Journal of the*

- American Geriatric Society. 2015; 63(10): 2052-2060.
6. Weinberg L, Hasni A, Duarte A. A single bout of resistance exercise can enhance episodic memory performance. *Acta Psychologica*. 2014; 153: 13-19.

Working out Your Mental Muscles

O'Connor P, Herring M, and Carvalho A. Mental health benefits of strength training in adults. *American Journal of Lifestyle Medicine*. 2010; 4(5): 377-396.

Running Barefoot

Alloway R, Alloway T, Magyari P, Floyd S. An exploratory study investigating the effects of barefoot running on working memory. *Perceptual and Motor Skills*. 2016; 122(2): 432.

Short Bursts of High-Intensity Exercise for Cardiovascular Health

Gillen JB, Martin BJ, MacInnis MJ, Skelly LE, Tarnopolsky MA, Gibala MJ. Twelve Weeks of Sprint Interval Training Improves Indices of Cardiometabolic Health Similar to Traditional Endurance Training despite a Five-Fold Lower Exercise Volume and Time Commitment. *PLoS One*. 2016; 11(4):e0154075.

Fructose and Omega-3s

Meng Q, Ying Z, Noble E, et al. Systems Nutrigenomics Reveals Brain Gene Networks Linking Metabolic and Brain Disorders. *EBioMedicine*. 2016.

The Unity of Yoga and Essential Oils

1. Michalsen A, Grossman P, Acil A, et al. Rapid stress reduction and anxiolysis among distressed women as a consequence of a three month intensive yoga program. *Med Sci Monit*. 2005; 11:555-61.
2. West J, Otte C, Geher K, et al. Effects of Hatha yoga and

- African dance on perceived stress, affect, and salivary cortisol. Ann Behav Med. 2004; 28:114-8.
3. Pilkington K, Kirkwood G, Rampes H, et al. Yoga for Depression: The Research Evidence. J Affect Disord. 2005; 89:13-24.
 4. Selvamurthy W, Sridharan K, Ray US, et al. A new physiological approach to control essential hypertension. Indian J Physiol Pharmacol. 1998; 42:205-13.
 5. McCaffrey R, Ruknui P, Hatthakit U, et al. The effects of yoga on hypertensive persons in Thailand. Holist Nurs Pract. 2005; 19:173-80.
 6. Desai R, Tailor A, Bhatt T. Effects of yoga on brain waves and structural activation: A review. Complement Ther Clin Pract. 2015 May; 21(2):112-118.
 7. Chioca LR, Ferro MM, Bareta IP, et al. Anxiolytic-like effect of lavender essential oil inhalation in mice: Participation by not GABA/benzodiazepine neurotransmission. J Ethnopharmacol. 2013; 147(2):412-218.
 8. Lehrner J, Eckersberger C, Walla P, et al. Ambient odor of orange in a dental office reduces anxiety and improves mood in female patients. Physiology & Behavior. 2000; 71:83-86.
 9. Cho MY, Min ES, Hur MH, et al. Effects of aromatherapy on the anxiety, vital signs, and sleep quality of percutaneous coronary intervention patients in intensive care units. Evid Based Complement Alternat Med. 2013; 381.
 10. Setzer WN. Essential oils and anxiolytic aromatherapy. Nat Prod Commun. 2009; 4(9):1305-1316.
 11. Diego MA, Jones NA, Field T, et al. Aromatherapy positively affects mood, EEG patterns of alertness and math computations. Int J Neurosci. 1998; 96(3-4):217-224.
 12. Moss M, Hewitt S, Moss L, et al. Modulation of cognitive performance and mood by aromas of peppermint and ylang-ylang. Int J Neurosci. 2008; 118(1):59-77.

13. Juergens UR. Anti-inflammatory properties of the monoterpane 1,8-cineole: Current Evidence for co-medication in inflammatory airway diseases. *Drus Res* (Stuttg). 2014.

The Science of Satiety

1. Rolls BJ, Roe LS. Effect of the volume of liquid food infused intragastrically on satiety in women. *Physiol Behav*. 2002;76(4-5):623-631.
2. Stenblom E-L, Montelius C, Erlandsson D, et al. Decreased Urge for Palatable Food after a Two-month Dietary Intervention with Green-plant Membranes in Overweight Women. *Obes Weight Loss Ther*. 2014;4(4).
3. Duraffourd C, De Vadder F, Goncalves D, et al. Mu-opioid receptors and dietary protein stimulate a gut-brain neural circuitry limiting food intake. *Cell*. 2012;150(2):377-388.
4. Van Wymelbeke V, Louis-Sylvestre J, Fantino M. Substrate oxidation and control of food intake in men after a fat-substitute meal compared with meals supplemented with an isoenergetic load of carbohydrate, long-chain triacylglycerols, or medium-chain triacylglycerols. *Am J Clin Nutr*. 2001;74(5):620-630.
5. Levitsky DA, Pacanowski CR. Effect of skipping breakfast on subsequent energy intake. *Physiol Behav*. 2013;119:9-16.
6. Schoenfeld BJ, Aragon AA, Krieger JW. Effects of meal frequency on weight loss and body composition: a meta-analysis. *Nutr Rev*. 2015;73(2):69-82.

Microplex MVp™ Meets, Not Exceeds, Recommended Dietary Intakes

1. Yetley EA. Multivitamin and multimineral dietary supplements: definitions, characterization, bioavailability,

- and drug interactions. Am J Clin Nutr. 2007;85(1):269S - 276.
2. Gregory J. Case study: Folate bioavailability. J Nutr. 2001;131:1376S - 1382S.

Science For Kids

STEM Education

1. Lessard S., et al. JNK regulates muscle remodeling via myostatin/SMAD inhibition. Nature Communications. 2018;9(3030).
2. Lessard S., et al. Resistance to aerobic exercise training causes metabolic dysfunction and reveals novel exercise-regulated signaling networks. Diabetes. 2013;62: 2717– 2727.

Some of the studies in this bibliography could be considered improper product claims if not shared properly. Instead of sharing the individual studies in this bibliography, doTERRA Wellness Advocates should share the blog posts referring to these studies.