

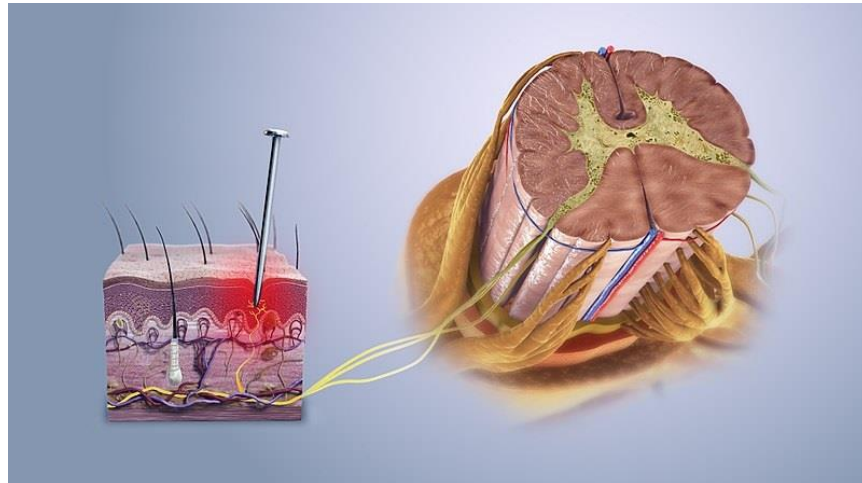
BEHIND THE SCIENCE JULY: STP

With Ruth Mayne and Mary Esther Gilbert, MSc HN, BSc NSP

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Questions & Answers:

1. What is the root cause of pain?



Wikimedia – Manu5, 2018

- Pain is associated with inflammation: where there is injury or damage at the micro cell level, the body responds by executing a series of inflammatory proteins that signal the nerve transmissions that instantly alert a person in the form of pain.
- Injury, inflammation, and pain can originate at the micro level endogenously within a system, as much as an injury that occurs exogenously or outside the system.
- A cascade of communication events involving sensory brain and nerve transmissions alert the person of an injury or malfunction.
- Any abnormal or damaged condition that triggers the body's defense mechanisms of the immune system also involve the regulating endocrine/hormonal system (Garcia-Leme, 1993).
- All systems work together immediately to begin the repair process and bring the body back to normal or homeostasis. As the repair work is progressively performed, the less inflammation and pain a person feels.
- Causes of injuries at the micro level in the body (free radicals):
 - Consuming injurious, biologically incompatible molecules: alcohol, smoking, trans fats (heat or chemically altered oils), chemical additives, synthetic toxic ingredients in refined, processed foodstuffs, cosmetics, body care products, household cleaners, industrial chemicals and pollutants, drug side effects—adversely affecting the immune system's detoxification and protective actions, the endocrine system's hormonal regulating actions, and the brain and nervous system's information transmissions.

- Prolonged stress and prolonged lack of proper amount of sleep, also affecting the immune and hormonal system functions.
- Lack of exercise, resulting in sluggish circulation creating heat and friction, less efficiency in the body's detoxification/cleansing processes and therefore accumulating and storing toxins in body fat cells and other tissues, all of which generate inflammatory/pain responses.
- Chronic dehydration creating heat and friction and triggering inflammatory responses: inadequate intake of purified spring water; drinking beverages containing artificial dyes, artificial sweeteners, synthetic flavorants, excessive amounts of both sugar and sodium.
- Imbalanced or missing critical, essential nutrients in the daily diet resulting in incomplete cellular processes, compromised system functions, damaged cells leading to inflammation.
- Deficiency in anti-inflammatory, cleansing, cell-regenerating foods: raw fresh, enzyme-active, light-energy-active botanicals containing a wide range of anti-inflammatory plant fluids (phytochemicals or phytonutrients).

Reference:

Garcia-Leme, J., & Farsky, S. P. (1993). Hormonal control of inflammatory responses. *Mediators of inflammation*, 2(3), 181–198. <https://doi.org/10.1155/S0962935193000250>

2. Outside of an injury, what can help our bodies avoid triggering the pain response?

- Avoid the many causes of inflammation and therefore the body's inflammatory responses that relay information to the person in the form of pain, swelling, and heat, or elevated body temperature (listed above):
 - 50-75% of the daily diet should consist of raw, enzyme and light energy-active botanicals to receive a wide array of anti-inflammatory, antioxidant phytochemicals, vitamins, and minerals, and electrically charged electrolytes in those plant fluids, which plant cells contain chemically pure water.
 - Eating high-water content fresh foods and drinking purified spring water is a fundamental way to avoid or avert an inflammatory process.

For more detailed instructions on which foods to choose in a daily nourishment protocol that prevents and often reverses inflammatory and pain conditions in the body's micro world , see my book ["Nutritional Synergy"](#).

3. Since we do not have 100% control of injuries, inflammation, overexertion and more, lets dig into another of my favorite products, STP: What is your opinion on using STP for minor aches and pains over say, Tylenol, aspirin, Ibuprofen etc.?

- The nutrient factors in the botanicals in the STP go to work immediately to repair the damage that causes pain and inflammation, whereas OTC pain meds turn off pain detector sites on cell membrane surfaces.

- OTC meds work by acting on brain cell receptors that control pain and body temperature by forcing the body to generate fewer hormones produced under inflammatory conditions, such as prostaglandins.
- Side effects of Tylenol, aspirin, Ibuprofen and other OTC anti-inflammatory drugs:
 - Do an online search on the phrase: “side effects of otc pain relievers”.
 - Generally, there are two types: acetaminophen (ibuprofen, naproxen, aspirin, ketoprofen), and nonsteroidal anti-inflammatory (NSAIDS) pain meds.
 - NSAIDS turn off the body’s response to pain caused by swelling such as menstrual cramps, sore throat, muscle sprains.
 - Acetaminophen does not act on inflammation: its actions turn off pain detectors that result from headaches and arthritis.
 - NSAIDS cause stomach bleeding, liver and kidney failure.

<https://www.uhhospitals.org/health-information/health-and-wellness-library/article/adult-diseases-and-conditions-v1/otc-pain-medications-and-their-risks>

4. Before we get into depth on ingredients, I noticed that we use the “root” often with many of them. Can you explain the reasoning behind this?

- Roots contain the highest concentrations of plant phytochemicals formed from the uptake of essential minerals from the soil, including nitrogen and phosphorus. Plants sequester carbon dioxide from the air, using soil nitrogen (sequestered by certain plants and important bacteria from the air), receive hydrogen via photosynthesis, and obtain oxygen via the conversion of carbon dioxide (CO₂) to carbon and oxygen.
- Along with a full range and concentration of mineral-rich soil, the elements carbon, hydrogen, oxygen, and nitrogen are key components for building living, nutrient-dense soil that nourishes the roots of plants.
- Roots are best harvested in the fall when all nutrients have been returning nutrients and energy from the stems, leaves, and flowers back into the roots, thereby increasing their amount of nutrients.

(Sardans, et. al., 2017)

Reference:

Sardans J, Grau O, Chen HYH, Janssens IA, Ciais P, Piao S, Peñuelas J. Changes in nutrient concentrations of leaves and roots in response to global change factors. *Glob Chang Biol.* 2017 Sep;23(9):3849-3856. doi: 10.1111/gcb.13721. Epub 2017 May 29. PMID: 28407324. [Changes in nutrient concentrations of leaves and roots in response to global change factors - PubMed \(nih.gov\)](#)

5. **Ashwagandha root, used for over 3000 years, has so many benefits! I know its known as an adaptogen; can you explain that, and then spend a few moments on the many other benefits on just this one ingredient.**

- As an adaptogen, the chemical constituents of Ashwagandha root help the body better respond to stress. This means nourishing the cell structures and the communication functions between the nervous system, immune and hormonal systems.
- This root contains various alkaloids, steroidal lactones, and saponins, all of which work on ensuring calmer reactions to stress by modulating immune responses and nerve transmission excitability. Highly nourished systems mean calmer, more logical and positive reactions to stress.
- Compounds in the other plant parts are concentrated further in the root:
 - Bitter compounds shown to relieve fever, painful swellings.
 - Astringent compounds (constrict cells of various body tissues)
 - Depurative compounds help purify the blood, bile, and clear phlegm.
 - Found to stimulate the production of sperm, increasing sperm count.
 - Calming effect of phytochemical compounds found to help improve memory loss, help prevent loss of consciousness (fainting) by maintaining proper blood flow to the brain. (Singh, et. al., 2011)
- Has a GABA mimetic (cognition promoting) effect through supporting the formation of new dendrites or neuropathway extensions of the nerve cells, which is helpful in those with memory deficit and neurodegenerative diseases. (Gilbert, 2021)

Reference:

Gilbert, M. E. (2021). [Potent Superfoods for Lifelong True Health](#). Tucson, AZ. Holistic Choices Publishing.

Singh, N., Bhalla, M., de Jager, P., & Gilca, M. (2011). An overview on ashwagandha: a Rasayana (rejuvenator) of Ayurveda. *African journal of traditional, complementary, and alternative medicines : AJTCAM*, 8(5 Suppl), 208–213.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3252722/>

6. **Turmeric Root: used for centuries! Most people are aware of its anti-inflammation properties; however, there is so much more to this “spice” and I had no idea its related to the “ginger” family! It seems this has been used in Ayurvedic medicine for a host of things, can you go over that for us.**

- Turmeric root is part of a family of about 120 species. *Curcuma longa* is the most widely known.
- Its use dates back 5,000 years in Ayurvedic medicine, and 2,000 years in Atharveda (Vedic scriptures of Hinduism).
- Its most active curcuminoid, curcumin, was first isolated in 1812, and its purified crystalline compound was announced in 1870.
- Western scientific research began studies on turmeric and its active compounds in the 1970’s, and continues today (Sharifi-Rad, et. al., 2020).
- The class of phytochemical compounds contained in the roots and rhizomes are the active curcuminoids and the sesquiterpenoids found in the roots volatile oils.

- As the result of peer-reviewed studies, those many compounds have been shown to exhibit the following properties:
 - Help attenuate inflammation and inflammatory responses.
 - Prevent abnormal cell growth and proliferation.
 - Help regulate blood sugar levels.
 - Help utilize cholesterol properly (maintain all cell structures) and maintain proper blood levels.
 - Help prevent blood vessel damage and dissolve obstructive clots.
 - Help cleanse the liver and carry away toxin accumulations.
 - Help control gastric upsets and destroy microorganisms that cause diarrhea.
 - Known as an antidote for venoms.
 (Gilbert, 2021)

Reference:

Gilbert, M. E. (2021). [Potent Superfoods for Lifelong True Health](#). Tucson, AZ. Holistic Choices Publishing.

Sharifi-Rad, J., Rayess, Y. E., Rizk, A. A., Sadaka, C., Zgheib, R., Zam, W., Sestito, S., Rapposelli, S., Neffe-Skocińska, K., Zielińska, D., Salehi, B., Setzer, W. N., Dosoky, N. S., Taheri, Y., El Beyrouthy, M., Martorell, M., Ostrander, E. A., Suleria, H. A. R., Cho, W. C., Maroyi, A., ... Martins, N. (2020). Turmeric and Its Major Compound Curcumin on Health: Bioactive Effects and Safety Profiles for Food, Pharmaceutical, Biotechnological and Medicinal Applications. *Frontiers in pharmacology*, 11, 01021. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7522354/>

7. **Grapple Plant Root: This one is interesting to me! Page 119 in your book talks about this ingredient. I was astonished that in Europe there have actually been studies done in relation to this helping with many issues. One that caught my eye, is Degenerative joints and tendonitis! Can you go into detail about this? Maybe even more impressive are some of the other things that Grapple addresses, feel free to elaborate for us!**
 - The phytochemicals in grapple plant root (*Harpagophytum procumbens*) that have their positive anti-inflammatory and anti-degenerative effects on our human cells are the iridoid glycosides: harpagoside, harpagide, and phenylpropanoid glycosides.
 - Help improve the body's pain and inflammation detection systems through nourishing and therefore correcting cell functions via human cell-to-plant cell DNA information, therefore halting the pain-causing, degenerative actions of pro-inflammatory biomarkers (proteins that detect inflammation) such as C-Reactive protein (CRP).
 (Gilbert, 2021)

Reference:

Gilbert, M. E. (2021). [Potent Superfoods for Lifelong True Health](#). Tucson, AZ. Holistic Choices Publishing.

8. **Ginger Root: if anyone on this call has issues with peptic ulcers.... Listen up! Ginger has SO many health benefits, as do all the ingredients, can you go thru some of what you feel are the important ones as it relates to being used for pain in STP?**

- Contains silica, a mineral found in the matrices of the body's tissues: bones, tendons, the aorta (largest artery), the kidneys, liver, hair, skin, and nails.
- Contains essential fatty acids linoleic acid (omega 6) and oleic acid (omega 9) the body needs for generating other fatty acids that maintain cell membranes, and that of brain and nerve cells.
- Strengthens immune system in detecting and destroying pathogenic organisms ahead of inflammatory reactions.
- Contains choline, which strengthens blood vessels and clears the blood of foreign debris, synthetic toxins, excess lipids, plaques and clots.
- Contains asparagine, component of thousands of critical proteins.
- Contains antitumoral ginsenosides and saponins that are known to cause cancer cell self-destruction (apoptosis).
(Gilbert, 2021)

Reference:

Gilbert, M. E. (2021). [Potent Superfoods for Lifelong True Health](#). Tucson, AZ. Holistic Choices Publishing.

9. Licorice root: Coughing and Phlegm?? Who knew! It looks like licorice root has been used for centuries! Help us understand how it works in STP and some of the major benefits like for coughing and phlegm!

- Use in Chinese medicine dates back to 2100 BC.
- Contains many saponin compounds known to destroy various viruses: influenza, enterovirus, herpes simplex Type 1, rotavirus and syncytial virus.
- Contains triperpenes that work similarly to the saponins. Triterpenes are found to inhibit virus replication, prevent virus integration into our DNA, stimulate the T lymphocyte immune cell proliferation, which destroy host cells that are virus infected.
- Infections cause the body to produce excess mucous and phlegm depending on the infected localized area; licorice root phytochemical compounds dissolve and destroy the above causes.
- Antibacterial, destroys Methicillin-resistant strains.
- The phytochemical compound liquiritigenin detoxifies the body of toxins released by illness-causing bacteria such as the α -Hemolysin exotoxin released by *Staphylococcus aureus*.
(Gilbert, 2021)

Reference:

Gilbert, M. E. (2021). [Potent Superfoods for Lifelong True Health](#). Tucson, AZ. Holistic Choices Publishing.

10. Cherry: Tell us why cherry was chosen to be included in STP other than it tastes good!

- Contains flavonoids, pectins, and anthocyanins that help strengthen the capillaries and overall vascular networks of the heart, thus contributing to the prevention of heart disease and its inflammatory state.
- Contains the anti-inflammatory salicylic acid, which is known for its effects on connective tissues, joints, and muscles.

- Contains the hormone melatonin, a neurotransmitter that regulates nerve and hormonal functions associated with sleep, and associated with protecting against dementia and memory loss.
- Melatonin is an antioxidant that protects the optic nerve and fatty white matter in the spinal cord to ensure that communications between nerve fibers carry information throughout the nerve network.
- Melatonin has been shown to protect various organs that ensure normal blood cholesterol, blood pressure, and adrenal functions.
(Gilbert, 2021)

Reference:

Gilbert, M. E. (2021). [Potent Superfoods for Lifelong True Health](#). Tucson, AZ. Holistic Choices Publishing.

11. Raspberry: good for more than just pain! And a significant source of Potassium, please explain why it works so well in STP and some of its other capabilities.

- Works well with other anti-inflammatory botanicals since it contributes an array of anti-inflammatory phytonutrients: tannins, flavonoids, and various organic acids that improve gut health or total digestive tract performance, and help produce energy.
- Contains high amounts of the phenolic compound ellagic acid, known for its ability to bind molecularly to cancer-causing chemicals, which inactivates their volatility and renders them unable to bind to our DNA, preventing cancer cells from forming their own blood vessels.
- Ellagitannins have been shown to reduce abnormal cell growths in the colon, pancreas, prostate glands, and skin, and protect cells against volatile toxic chemicals in cigarettes and artificial food additives.
- A blood purifier.
(Gilbert, 2021)

Reference:

Gilbert, M. E. (2021). [Potent Superfoods for Lifelong True Health](#). Tucson, AZ. Holistic Choices Publishing.

12. Cayenne Pepper: I had no clue this is well known for relieving chronic and acute pain! Can you talk about why that is.

- Contains capsaicin, known to stimulate endorphin production, a group of hormones known to result in feelings of euphoria, which have an analgesic or pain-reducing effect.
- Endorphins are produced by the brain's glands, the hypothalamus and pituitary, in response to stress or pain.
- Capsaicin has exhibited the potential to modulate the body's metabolism by activation of cell receptor sites in body tissues that activate antioxidant enzymes while inhibiting pro-inflammatory proteins. Capsaicin is therefore a very good anti-inflammatory.
- Capsaicin helps utilize fats for energy production rather than carbohydrates.
- Cayenne's capsaicin and capsaicinoids are effective against destroying common illness-causing bacteria: *Escherichia coli* (*E. Coli*), *Salmonella*, *Pseudomonas*, *Staphylococcus aureus* (Staph),

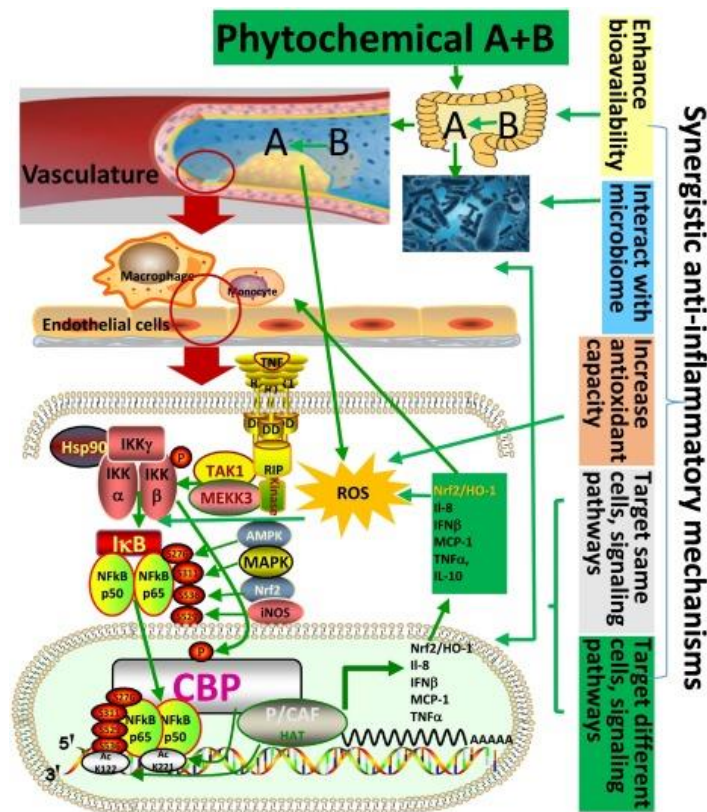
Helicobacter pylori, and *Listeria monocytogenes*, and inhibit the toxin associated with cholera or *Vibrio cholerae*.
(Gilbert, 2021)

Reference:

Gilbert, M. E. (2021). [Potent Superfoods for Lifelong True Health](#). Tucson, AZ. Holistic Choices Publishing.

13. One question that always comes up, what it is about the BLEND of ingredients that make STP, and all our lozenges work so well?

- There is an impressive holistic synergy when the array of phytochemicals in the various botanicals are combined, where the body is able to better utilize the greater variety of compounds to complete its cellular processes.



Reference:

L.J. Zhang *et al.*
Synergistic anti-inflammatory effects and mechanisms of combined phytochemicals. *J Nutr Biochem.* (2019). [Synergistic anti-inflammatory effects and mechanisms of combined phytochemicals - ScienceDirect](#)

Mary Esther’s new book, [“Nutritional Synergy”](#), provides deeper knowledge about the powerful health-protective effects of superfood combinations for daily food selections.

14. As to STP, what other lozenges will pair well with them?

- MLS, GRW, SLD, HPR, HRT

Contact Mary Esther Gilbert

<https://www.holisticchoices.com/contact>