

The Science Behind the Power

Christina Parks, Ph.D. Cellular and Molecular Biology

Intellectual Power combines herbs that are well-known for their healing powers with lesser-known exotic herbs whose healing powers have none-the-less been known in the islands and among traditional healers for centuries. To this, the mineral and vitamin rich sea-foods, bladderwrack and sea moss, have been added. While science has yet to catch up to what traditional healers already know about these more exotic herbs, a growing number of studies now reveal that the “everyday” herbs in *Intellectual Power* are much more potent than we have been taught to believe. New research confirms that they reduce inflammation, balance immune function, and reduce anxiety and depression. Of course, all of these actions are key to optimizing brain function.

Basil, oregano, rosemary, soursop and turmeric act very powerfully in the body because they activate the body’s main healing pathway, known as the Nrf2 pathway.[2-13] Activation of this pathway reduces inflammation and detoxifies tissues at the cellular level.[1] Anti-oxidants such as vitamin C reduce inflammation by binding and neutralizing substances in a 1:1 ratio.[1] However, activation of the Nrf2 pathway results in the production of two of the most powerful enzymes in the body, Catalase and Super Oxide Dismutase (SOD).[1] These amazing enzymes neutralize MILLIONS of damaging free-radicals per SECOND!! That’s the awesome power of activating the healing pathways that God already designed into you! Activation of the Nrf-2 pathway also increases expression of the body’s master anti-oxidant, glutathione.[1] Glutathione not only reduces inflammation by mopping-up damaging free radicals, it binds to foreign substances (such as toxins, medications and heavy metals) in the body and facilitates their removal.[1] It is highly likely that the herbs in *Intellectual Power* will synergize together in their activation of the Nrf2 pathway, optimizing their ability to reduce inflammation and detoxify the body. Carnosic acid, a major component of rosemary, exerts neuro-protective properties because it crosses the blood-brain barrier and accumulates in the brain. [13] Once in the brain, most of the neuro-protective mechanisms of carnosic acid appear to be NRF-2 mediated, including upregulation of glutathione production, cancer prevention, downregulation of inflammatory cytokines, and increases in Brain-Derived Neurotrophic Factor (BDNF). [13] Oregano also increases the activity of brain derived neurotrophic factor (BDNF), which is associated with brain health and appears to be clinically relevant to the improvement of anxiety symptoms in rats. [14,15] Bladderwrack and sea moss support the activation of the anti-inflammatory Nrf2 pathway by providing key minerals, such as iron and manganese.

Herbs such as oregano, basil, rosemary, Gullyroot and Carpenter’s Bush are immunomodulatory, which means they act to bring the immune response back into balance.[6,13,17-20] Specifically, oregano supplementation was found to reduce aberrant

immune activation in the brain. Toxins, pathogens, and even immunization can lead to the over-expression of certain immune receptors in the brain (TLR2/4). Increased expression of these receptors indicates that the immune system in the brain is hyperactivated and is associated with anxiety, memory deficits, autoimmune encephalopathy, and autoimmune demyelination. Oregano downregulates the expression of these immune receptors, suggesting that it may have a therapeutic effect on autoimmune disorders that affect the brain and immune system as well as on immunization-induced brain inflammation.[14,15,16]

The herbs in *Intellectual Power* have adaptogenic properties well beyond what I have explained above through which they help restore balance and health to the body. These include their ability to eliminate pathogens in the body [21-23], restore proper gut function [2], balance glucose metabolism [24, 25], relieve pain [26], and even help inhibit tumor growth [27, 28]. Many people suffer from compromised thyroid and adrenal function. Sea moss and bladderwrack contain iodine, magnesium and potassium that are known to support the function of these critical glands. Soursop contains high levels of vitamin C, which also supports the optimal function of the adrenal glands as well as supporting the proper functioning of the gut and immune systems.

There is overwhelming scientific evidence for the positive effects these herbs have on the body. Considering the fact that many of their historically known healing properties have not yet been submitted to deep scientific analysis, it is awesome to consider the many, many ways they are likely contributing to the healing of our bodies.

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Tumeric

- Tumeric is well known for its neuro-protective effects on the brain.[1]
- Many of its neuro-protective effects result from the fact that turmeric strongly activates the body's major antioxidant, detox pathway, which is known as the Nrf-2 pathway. This

pathway activates the enzymes (super oxide dismutase [SOD] and catalase) that reduce inflammation by mopping up free radicals. Activation of the Nrf-2 pathway results in increased expression of the body's master anti-oxidant, glutathione. Glutathione not only mops up free radicals, it binds to foreign substances (such as toxins, medications and heavy metals) in the body and facilitates their removal. Thus, adequate levels of glutathione are key to detoxifying the body, including the brain.[1]

- Turmeric, through activation of the Nrf-2 pathway, has been shown to increase the production of nitric oxide (NO), a molecule which helps blood vessels to relax. Increases in NO production has many positive effects on sexual functioning, such as improving erectile function, ejaculatory function, libido, vaginal lubrication, and increasing testosterone levels.[1]
- Turmeric promotes the growth of good bacteria in the gut and inhibits the growth of bad bacteria. Importantly, turmeric supports the growth of two key groups of bacteria, *Bifidobacteria* and *Lactobacillus*. Work done by gastroenterologist Sabin Hazan demonstrated that people low in these two strains of bacteria are more susceptible to contracting COVID and having worse health outcomes. Similarly, COVID infection appears to deplete the gut of these key microbes, potentially leading to many of the symptoms of post-COVID syndrome. Restoration of these strains of bacteria to the gut is key to rebuilding a resilient microbiome that restores balance to the body and optimizes the gut-brain connection.[2]
- Curcumin, the key component of turmeric has substantial anti-cancer activity. Its ability to reduce inflammation is key to its anti-cancer activity. However, it has also been shown to restore the function of the immune cells (T-cells) whose role it is to destroy tumors.[3,4]
- Curcumin activates pathways that bring the immune system into balance. It has been shown to reduce the aberrant signaling present in autoimmune diseases, such as Lupus.[5]

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Oregano-

- The strong anti-microbial effects of oregano have long been known. [1,2,3]
 - However, recent research demonstrates that oregano has profound positive effect on brain health. Oregano increases in the activity of brain derived neurotrophic factor (BDNF), which is associated with brain health and appears to be clinically relevant to the improvement of anxiety symptoms in rats. [4]
 - Oregano inhibits anxiety by bringing the brain's immune response back into balance. Specifically, oregano supplementation reduced the activity of Toll-Like Receptors (TLRs) 2 and 4. Increased expression of TLR2/4 indicates that the immune system in the brain is hyperactivated and is associated with anxiety, memory deficits, autoimmune encephalopathy, and autoimmune demyelination. The ability of oregano to modulate the expression of these immune receptors suggest that it may have a therapeutic effect on autoimmune disorders that affect the brain and immune system as well as vaccine-induced brain inflammation. [4,5,6]
 - Oregano activates the body's major antioxidant, detox pathway, which is known as the Nrf-2 pathway. This pathway activates the enzymes (super oxide dismutase [SOD] and catalase) that reduce inflammation by mopping up free radicals. Activation of the Nrf-2 pathway results in increased expression of the body's master anti-oxidant, glutathione. Glutathione not only mops up free radicals, it binds to foreign substances (such as toxins, medications and heavy metals) in the body and facilitates their removal. Thus, adequate levels of glutathione are key to detoxifying the body, including the brain.[7]
 - Oregano has a positive effect on gut health, which is key to proper immune function and brain function. Oregano is used as an antimicrobial in livestock feed, where it has been found to increase the prevalence of healthy bacteria as well as improve the intestinal barrier (prevent leaky gut) in animals. [8]
 - Importantly, oregano has been shown to inhibit and eradicate the formation of pathogenic biofilms. Pathogenic biofilms make the eradication of bacterial infections challenging, so inhibiting and reducing their presence in the body is key to the maintenance of optimal health, especially in the gut and urinary tract. [9,10]
 - Carvacrol, a major component of oregano has key anti-cancer properties. It has been shown to inhibit tumor progression as well as inhibit cell migration, invasion, and angiogenesis in tumors. [11,12]
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