

Meditation: Biochemistry & Research

I. Meditation stimulates the parasympathetic nervous system which is the part of our involuntary nervous system controlled by the vagus nerve.

Stimulation of the parasympathetic system:

• Increases a sense of rest and tranquility	• Increases short term memory	• Decreases pulse and blood pressure
• Increases digestion	• Supports the immune system	• Increases near vision
• Decreases blood sugar		

II. Meditation changes how a person perceives negative stimuli – increases the coping response and decreases the stress response. Therefore, meditation decreases the release of CRF (corticotropin releasing factor) from the hypothalamus, thus decreasing the overall level of catecholamines and cortisol.

1. Decreasing catecholamines (norepinephrine and epinephrine) will:

• Lower blood pressure	• Lower pulse	• Lower cholesterol
• Lower blood sugar	• Increase insulin	

2. Decreasing overall cortisol will:

• Cause less edema	• Increase wound healing	• Improve digestion
• Increase leukocytes	• Improve recent memory recall	• Increase blood flow to skin
• Support bone formation	• Decrease blood pressure	• Support the production of hormones, and neurotransmitters

III. Other Effects of Meditation: increases natural killer cells that scan for cancer and reduces proinflammatory cytokines that increase inflammation. It also increases neuroplasticity of the brain and increases antibodies and improves immune function.

Research has demonstrated benefits from meditation for the following conditions (see <http://www.fammed.wisc.edu/integrative/modules/meditation>, accessed 9/6/10):

Anxiety	Blood pressure	Cancer	Atherosclerosis	Chronic pain	Psoriasis
Coronary artery disease	Depression	Eating disorders	Fibromyalgia	Longevity	Obesity
Cognitive function in the elderly	Psychiatric disorders	Serum cholesterol	Smoking cessation	Tension headaches	OCD/ADD

This can result in reduced use of the medical system, and decreased pain. Meditation is also used effectively for improving parenting skills and communication.

The intangible effects (that are not easily described by quantitative scientific methods) include benefits such as: increased spirituality and connectedness to other people as well as a new kind of joyful awareness.