

# **Natural Management of Surgery**

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# **Full disclosure**

**Chanchal Cabrera is a clinician and a lecturer in botanical medicine. She receives no financial remuneration for products or brands named in lectures. Her research and work is not funded by any product company.**

# **Surgery**

**From the Greek: χειρουργική *cheirurgikē*, via Latin: *chirurgiae*, meaning "hand work"**

**A medical specialty that uses manual and instrumental techniques on a patient to investigate and/or treat a pathological condition such as disease or injury, or to help improve bodily function or appearance.**

**(wikipedia)**

**Each year, more than 234 million surgical procedures are performed worldwide. Some patients exhibit cognitive impairment, including memory deficits, after surgery and anesthesia**

**Present in approximately 37% of young adults and 41% of elderly patients at hospital discharge and in 6% of young adults and 13% of elderly patients at 3 months after surgery**

**Associated with poor patient outcomes, including reduced quality of life, loss of independence, and increased mortality.**

**Causes of postoperative cognitive dysfunction:  
inflammation triggered by surgical trauma**

**Infection**

**Opioids**

**Stress & sleep disturbances**

**Duration of anesthesia is positively correlated with the incidence of postoperative cognitive deficits in patients. A single exposure to an anesthetic can cause retrograde and anterograde memory deficits that persist for days to weeks in rodent models.**

*J Clin Invest.* 2014. doi:10.1172/JCI76669

**Sustained increase in  $\alpha 5$ GABA<sub>A</sub> receptor function impairs memory after anesthesia**

Agnieszka A. Zurek, Jieying Yu, Dian-Shi Wang, Sean C. Haffey, Erica M. Bridgwater, Antonello Penna, Irene Lecker, Gang Lei, Tom Chang, Eric W.R. Salter and Beverley A. Orser

**Surgery is a technology consisting of a physical intervention on tissues.**

**A procedure is considered surgical when it involves cutting of a patient's tissues or closure of a previously sustained wound. Other procedures such as angioplasty or endoscopy, may be considered surgery if they involve "common" surgical procedure or settings, such as use of a sterile environment, anesthesia, antiseptic conditions, typical surgical instruments, and suturing or stapling.**



**All forms of surgery are considered invasive procedures; so-called "noninvasive surgery" usually refers to an excision that does not penetrate the structure being excised (e.g. laser ablation of the cornea) or to a radiosurgical procedure (e.g. irradiation of a tumor).**



- **Excision surgery names often start with a name for the organ to be excised and end in -ectomy.**
- **Procedures involving cutting into an organ or tissue end in -otomy. A surgical procedure cutting through the abdominal wall to gain access to the abdominal cavity is a laparotomy**
- **Minimally invasive procedures involving small incisions through which an endoscope is inserted end in -oscopy. E.g. such surgery in the abdominal cavity is called laparoscopy.**

- **Procedures for formation of a permanent or semi-permanent opening called a stoma in the body end in -ostomy.**
- **Reconstruction, plastic or cosmetic surgery of a body part starts with a name for the body part to be reconstructed and ends in -oplasty. Rhino is used as a prefix for "nose", so rhinoplasty is basically reconstructive or cosmetic surgery for the nose.**
- **Reparation of damaged or congenital abnormal structure ends in -rraphy. Herniorraphy is the reparation of a hernia, while perineorrhaphy is the reparation of perineum.**

- **Neolithic people performed trepanation in which a hole is drilled into the skull, exposing the dura mater in order to treat health problems related to intra cranial pressure and other diseases.**
- **Ancient Indians carried out rhinoplasties, labioplasties and ceasarians.**

- **Remains from the early Harappan periods of the Indus Valley Civilization (c. 3300 BCE) and a jaw bone from Ancient Egypt, dated to approximately 2650 BCE, shows perforations just below the roots of the molars, indicating the draining of an abscessed tooth.**
- **The oldest known surgical texts date back to ancient Egypt about 3500 years ago.**

**The patron saints for surgeons are Saint Luke the Evangelist, the physician and disciple of Christ; Saints Cosmas and Damian (3rd century physicians from Syria); Saint Quentin (3rd century saint from France); Saint Foillan (7th century saint from Ireland) and Saint Roch (14th century saint from France).**

# Complications of surgery

- **Bleeding**
- **Blood clots**
- **Infection**
- **Scarring and adhesions**
- **Pain**
- **Adverse drug reactions**
- **Poor self image**
- **Disablement**
- **Cognitive and memory decline**

Ann Neurol. 2011 Dec;70(6):986-95..

**Resolving postoperative neuro-inflammation and cognitive decline.**

Terrando N, Eriksson LI, Ryu JK, Yang T, Monaco C, Feldmann M, Jonsson Fagerlund M, Charo IF, Akassoglou K, Maze M.

**In this study mice underwent stabilized tibial fracture operation under analgesia and general anesthesia. Separate cohorts of mice were tested for systemic and hippocampal inflammation, integrity of the blood-brain barrier (BBB), and cognition.**

**Peripheral surgery disrupts the BBB via release of tumor necrosis factor-alpha (TNF $\alpha$ ), which facilitates the migration of macrophages into the hippocampus.**



**Macrophage-specific deletion of I $\kappa$ B kinase (IKK) $\beta$ , a central coordinator of TNF $\alpha$  signaling through activation of nuclear factor (NF)  $\kappa$ B, prevents BBB disruption and macrophage infiltration in the hippocampus following surgery. Activation of the  $\alpha$ 7 subtype of nicotinic acetylcholine receptors, an endogenous inflammation-resolving pathway, prevents TNF $\alpha$ -induced NF- $\kappa$ B activation, macrophage migration into the hippocampus, and cognitive decline following surgery.**

# Cognitive and memory decline

**Surgery may cause post-operative decline in memory and cognitive function due that inflammatory proteins may cause damage to the blood-brain barrier and allow for immune competent blood cells to interfere with memory functions, but may be prevented with a pre-operative dosage of a nicotine like medicine. This affects 20 - 25% of the patients for a few months, but very few are affected for more than 1 year**

**Natural compounds that inhibit NF- $\kappa$ B through an anti-oxidant effect (Boik 2001)**

- **Melatonin**
- **Vitamin E succinate**
- **Alpha lipoic acid**
- **Vitamin C**
- **N-acetyl-cysteine**

**Natural compounds that inhibit NF- $\kappa$ B by non-antioxidant means (Boik 2001)**

- **Vitamin D**
- **Apigenin**
- **Curcumin**
- **CAPE**
- **EGCG**
- **Emodin**
- **Genistein**
- **Luteolin**
- **Parthenlide**
- **Proanthocyanidins**
- **Quercitin**
- **Resveratrol**
- **PTK and PKC inhibitors**
- **Leukotrine inhibitors**

**Even a brief exposure to a GABAergic general anesthetic triggers a sustained increase in expression of  $\alpha 5$ GABA<sub>A</sub>Rs in the hippocampus. This in turn causes deficits in anterograde memory.**

**In contrast, the anesthetic dexmedetomidine, which targets adrenergic receptors rather than GABA<sub>A</sub>Rs, causes no change in the amplitude of memory performance. These results show that the activity of primary target receptors for GABAergic anesthetics does not return to baseline after the drugs are eliminated.**

*J Clin Invest.* 2014. doi:10.1172/JCI76669

**Sustained increase in  $\alpha 5$ GABA<sub>A</sub> receptor function impairs memory after anesthesia**

Agnieszka A. Zurek, Jieying Yu, Dian-Shi Wang, Sean C. Haffey, Erica M. Bridgwater, Antonello Penna, Irene Lecker, Gang Lei, Tom Chang, Eric W.R. Salter and Beverley A. Orser

# Botanicals for mental sharpness

- **Ginkgo biloba**
- **Centella asiatica**
- **Rosmarinus off.,**
- **Vinca major / minor**
- **Huperzia serrata**
- **Rhodiola rosea**
- **Basil essential oil**
- **Peppermint essential oil**

## **Other brain tonics**

**Phosphatidyl choline**

**Fish oil**

**Evening primrose oil**

**Sea buckthorn oil**

**B complex vitamins**

**St. John's wort**

**Oat straw**



**Nearly a third of surgery patients use at least one herbal supplement regularly but few disclose their use of herbs to a qualified medical professional.**

**71 percent of Canadian adults report they have used a natural health product, and 38 percent report they use at least one on a daily basis.**

**The Canadian Marketplace and Regulations for Dietary Supplements**

January 18, 2010

# **Surgery stimulates angiogenesis**

**Surgery up-regulates several growth factors necessary for angiogenesis, as well as inflammatory pathways, such as COX-2 and LOX-5.**

**These compounds are up-regulated post-surgery for the purpose of angiogenesis, an integral part of the body's innate healing process.**

**Intrinsic contradiction with strategies for managing cancer i.e. anti-inflammatory, anti-angiogenic**

Circulation 2004;110:1219-1225.

## **Modulating Angiogenesis: The Yin and the Yang in Ginseng**

Sengupta, PhD; Sue-Anne Toh, MBChB; Lynda A. Sellers, PhD; Jeremy N. Skepper, PhD; Pieter Koolwijk, PhD; Hi Wun Leung, PhD; Hin-Wing Yeung, PhD; Ricky N.S. Wong, PhD; Ram Sasisekharan, PhD; Tai-Ping D. Fan, PhD

**Existing literature on ginseng reports both wound-healing and antitumor effects of ginseng extract through opposing activities on the vascular system.**

**A mass spectrometric compositional analysis of American, Chinese and Korean, and Sanqi ginseng revealed distinct “sterol ginsenoside” fingerprints, especially in the ratio between a triol, Rg1, and a diol, Rb1, the 2 most prevalent constituents.**

**Dominance of Rg1 leads to angiogenesis.**

**Rb1 exerts an opposing effect.**

**Rg1 promoted functional neovascularization into a polymer scaffold in vivo and the proliferation of, chemo-invasion of, and tubulogenesis by endothelial cells in vitro, mediated through expression of nitric oxide synthase and the phosphatidylinositol-3 kinase→Akt pathway.**

**Rb1 inhibited the earliest step in angiogenesis, the chemo-invasion of endothelial cells.**

**This study explains, for the first time, the ambiguity about the effects of ginseng in vascular pathophysiology based on the existence of opposing active principles in the extract.**

**It also unraveled a speciogeographic variation impinging on the compositional fingerprint that may modulate the final phenotype.**

**This emphasizes the need for regulations standardizing herbal therapy, currently under the Dietary Supplement and Health Education Act.**

**Furthermore, we propose that Rg1 could be a prototype for a novel group of nonpeptide molecules that can induce therapeutic angiogenesis, such as in wound healing.**



Surgeons prepare for the world's first loopendectomy. Objective: Remove that part of the brain that plays the same snippet of music over and over and over.



**Does surgery contribute to cancer spread?**



**“A surgeon can only cut out what is seen and felt under the knife, while millions of cancer cells grow and multiply in the blood, the nuclei of future cancer. Another fact that the surgeon forgets is that every operation is a shock to the nervous system, it lowers the nerve power, weakens the power of resistance to disease and thus encourages the invasion of cancer.”**

**Eli G. Jones, 1894, “Cancer – Its causes, symptoms, and treatments”.**

Int J Cancer. 1999 Mar 15;80(6):880-8.

**Evidence that stress and surgical interventions promote tumor development by suppressing natural killer cell activity.**

Ben-Eliyahu S, Page GG, Yirmiya R, Shakhar G.

Department of Psychology, Tel Aviv University, Israel

- **Study assessed the degree to which stress-induced alterations in natural killer (NK) cell activity underlie increased susceptibility to tumor development in F344 rats.**
- **Two stress paradigms were used: forced swim and abdominal surgery.**
- **Findings indicate that stress-induced suppression of NK activity is sufficient to cause enhanced tumor development.**

Anesthesiology 2001; 94:1066–73

**Attenuation of the Tumor-promoting Effect of Surgery  
by Spinal Blockade in Rats**

Shahar Bar-Yosef, M.D., Rivka Melamed, M.Sc., Gayle G.  
Page, D.N.Sc., Guy Shakhar, M.A., Keren Shakhar, M.A.,  
Shamgar Ben-Eliyahu, Ph.D.

**The perioperative period is characterized by a state of immunosuppression, which was shown in animal studies to underlie the promotion of tumor metastasis by surgery.**

**This immunosuppression is partly ascribed to the neuroendocrine stress response. Addition of spinal blockade to block the HPA axis alongside general halothane anesthesia markedly attenuates the promotion of metastasis by surgery.**

**Also consider**

**Echinacea**

**Astragalus**

**Mushrooms**

**Shiitake (*Lentinus edodes*)**

**Caterpillar fungus (*Cordyceps sinensis*)**

**Reishi (*Ganoderma lucidum*)**

**Maitake (*Grifola frondosa*)**

**Turkey tail (*Trametes versicolor*)**

Int J Surg. 2005;3(3):179-87.

**Does surgery induce angiogenesis in breast cancer?  
Indirect evidence from relapse pattern and  
mammography paradox.**

Retsky M, Demicheli R, Hrushesky WJ.



- **Relapses most commonly occur after surgery for breast cancer around 8-10 months later for young women with node-positive disease.**
- **It is suggested by this study that surgery probably instigated angiogenesis in dormant distant disease in approximately 20% of cases for premenopausal node-positive patients.**

- **Surgery-induced angiogenesis accelerates disease by a median of two years and produce 0.11 early deaths per 1000 screened young women in the third year of screening.**
- **The study concludes that removing tumors could remove the source of inhibitors of angiogenesis or that growth factors could appear in response to surgical wounding.**

Int J Cancer. 2004 Nov 20;112(4):554-9.

**Vascular density in colorectal liver metastases increases after removal of the primary tumor in human cancer patients**

Charlotte F.J.M. Peeters, Johan R. Westphal, Robert M.W. de Waal, Dirk J. Ruiter, Theo Wobbes, Theo J.M. Ruers,

**The presence of a primary tumor is correlated with decreased vascularization of its distant metastases.**

**Resection of the primary tumor results in an increased vascularization of metastatic lesions.**

Surgery. 2005 Feb;137(2):246-9.

**Decrease in circulating anti-angiogenic factors (angiostatin and endostatin) after surgical removal of primary colorectal carcinoma coincides with increased metabolic activity of liver metastases.**

Peeters CF, de Geus LF, Westphal JR, de Waal RM, Ruiters DJ, Wobbles T, Oyen WJ, Ruers TJ.

# Angiostatin

**Angiostatin is an endogenous angiogenesis inhibitor (i.e., it blocks the growth of new blood vessels), and it is currently undergoing clinical trials for its use in anticancer therapy.**

**It is fragment of a larger protein, plasmin, itself a fragment of plasminogen**

**Appears to regulate inhibition of endothelial cell migration, proliferation and induction of apoptosis**

# Endostatin

**Endostatin is an anti-angiogenic agent, similar to angiostatin and thrombospondin.**

**Endostatin may operate by interfering with the pro-angiogenic action of growth factors such as basic fibroblast growth factor (bFGF/FGF-2) and vascular endothelial growth factor (VEGF).**

**Removal of a primary colorectal tumor resulted in an increase in metabolic activity and liver metastasis.**

**This finding indicates that the primary tumor suppressed angiogenesis in its distant metastasis, and that removal of the primary lesion caused a flare-up in vessel neoformation and, thus, enhanced metabolic activity in its liver metastasis.**



Gastric Cancer. 2002;5(3):137-41.

**Surgery for gastric cancer increases plasma levels of vascular endothelial growth factor and von Willebrand factor.**

Ikeda M, Furukawa H, Imamura H, Shimizu J, Ishida H, Masutani S, Tatsuta M, Kawasaki T, Satomi T.

**Vascular endothelial growth factor (VEGF) is a potent inducer of angiogenesis that is necessary for wound healing and also promotes tumor growth. It is anticipated that plasma levels would increase after major surgery and that such elevations may facilitate tumor growth.**

**The study analyzed the effect of gastric surgery on the plasma concentrations of vascular endothelial growth factor (VEGF), soluble P-selectin (sP-selectin), and von Willebrand factor (vWf), measured in 14 patients with gastric cancer before operation and on postoperative day 1.**

**Because VEGF, sP selectin and vWf are involved in angiogenesis, tumor-platelet adhesion, and tumor-endothelial cell adhesion, surgically induced elevations influence tumor growth and metastasis.**

## **NM23 gene**

**A family of genes, acting to inhibit metastatic cancer. When nm23 is lost, the cell loses its ability to stay in one place and starts moving throughout the body.**

**Mutated nm23 genes are found in a variety of tumors including breast, colon and pancreatic cancers.**

Seifert M, Welter C, Mehraein Y, Seitz G.

**Expression of the nm23 homologues nm23-H4, nm23-H6, and nm23-H7 in human gastric and colon cancer.**

J Pathol. 2005 Apr;205(5):623-32.

**Eight members of the nm23-gene family have been described. The involvement of nm23-H1 and nm23-H2 in tumour progression and metastasis, as well as in gene regulation and apoptosis, has been shown in numerous studies.**

**The study was designed to explore the role in tumours played by nm23-H4, -H6, and -H7.**

**Findings indicate that nm23-H6, and particularly nm23-H4 and -H7, may be involved in the development of colon and gastric carcinoma.**

**A contribution to tumour progression or metastasis could not, however, be proven.**

**Elucidation of the specific mechanisms by which the nm23 homologues nm23-H4, -H6, and -H7 are involved in tumour development requires further studies.**

**120 cases of CRC were collected in this study. Medical clinical records and 5-year follow-up data were reviewed.**

**Dukes' classification, p53 and nm23-H(1) seemed to be independent and important prognostic factors. This prognostic model could be used to evaluate the prognosis of patients with CRC by clinicians**

Zhonghua Liu Xing Bing Xue Za Zhi. 2005 Mar;26(3):214-7

**[Study on the prognostic factors of colorectal cancer after radical resection and on suggested model for prediction] [Article in Chinese]**

Yang YF, Li PZ, Liang XB, Han XL, Li YP, Cong J.



**The presence of nuclear NM23 protein may be a good marker for predicting the metastatic potential of Salivary Gland Neoplasm malignancies.**

Virchows Arch. 2006 Nov 8

**Immunohistochemical localization of the NM23 protein in salivary gland neoplasms with distinct biological behavior.**

do Nascimento KC, de Faria PR, Dib LL, Ferreira de Aguiar MC, Cardoso SV, Chen J, Loyola AM.

**Down-regulations of nm23, E-cadherin, and beta-catenin closely relate to metastasis of NSCLC. Detection of nm23, E-cadherin, and beta-Catenin might be helpful to predict prognosis of NSCLC patients.**

Ai Zheng. 2005 May;24(5):616-21

**Expressions of Nm23, E-cadherin, and beta-Catenin in Non-small Cell Lung Cancer and Their Correlations with Metastasis and Prognosis [Article in Chinese]**

Tang XJ, Zhou QH, Zhang SF, Liu LX.

**Medroxyprogesterone acetate (MPA), a progestin that has been tested as treatment for advanced breast cancer, elevates expression of the Nm23-H1 metastasis suppressor gene in hormone receptor-negative metastatic human breast carcinoma cell lines in vitro, via a glucocorticoid receptor-based mechanism.**

**Curcumin enhances the expression of antimetastatic proteins, tissue inhibitor metalloproteinase (TIMP)-2, nonmetastatic gene 23 (Nm23), and E-cadherin.**

J Environ Pathol Toxicol Oncol. 2003;22(1):49-58.

**Curcumin exhibits antimetastatic properties by modulating integrin receptors, collagenase activity, and expression of Nm23 and E-cadherin.**

Ray S, Chattopadhyay N, Mitra A, Siddiqi M, Chatterjee A.



**"ANY REASON WHY I CANT KEEP HIM IN THAT CAST?"**

## Three reasons for delaying surgery (Yance):

**If you have been successful at shrinking the tumor, or removing it entirely, your long-term prognosis is good; but if you remove the tumor, then start a systemic program, you have no way of knowing how you are affecting the cancer.**

**If you have shrunk the tumor, surgery becomes easier, less invasive, and often spares the need for reconstruction; the smaller the tumor the less aggressive the surgery often needs to be.**

**Because cancer is a systemic disease, treating upfront systemically reduces the risk of metastasis.**

## **Questions to ask your surgeon:**

- Why am I having this operation? What are the chances of its success?**
- Is there any other way to treat my disease?**
- Other than my disease am I healthy enough to go through the stress of surgery and the drugs used to do it (anesthesia)?**
- Are you certified by the American Board of Surgery and/or Specialty Surgery Board?**

- **How many operations like this have you done? What is your success rate? Are you experienced in operating on my kind of disease?**
- **Exactly what will you be doing in this operation? What will you be taking out? Why?**
- **How long will the surgery take?**
- **Will I need blood transfusions?**
- **If so, can I donate blood now?**
- **What can I expect afterwards? Will I be in a lot of pain? Will I have drains or catheters? How long will I need to be in the hospital?**



- **How will my body be affected by the surgery? Will it work or look different? Will any of the effects be permanent?**
- **How long will it take for me to go back to my usual activities?**
- **What are the possible risks and side effects of this operation? What is the risk of death or disability?**
- **What will happen if I choose not to have the operation?**
- **What are the chances that the surgery will cure my disease?**

# **Informed consent**

**When you sign the consent form you are saying that you have received this information and you are willing to have the surgery. It's important that you read the consent form and understand each of the above issues before signing it.**

**The details may vary from state to state, but the informed consent form usually says that your doctor has explained the following things:**

- **Your condition and why surgery is an option**
- **The goal of the surgery**
- **How the surgery is to be done**
- **How it may benefit you**
- **What your risks are**
- **What side effects to expect**
- **What other treatment options you have**

**Before leaving the hospital be sure that you understand the following:**

- **How you will care for your wound at home**
- **What to look for that might need attention right away**
- **What your activity limits are (driving, working, lifting, etc.)**
- **Other restrictions (diet, those related to pain medicine, etc.)**

- **What medicines to take and how often to take them, including pain medicines**
- **Who to call with questions or problems that may come up**
- **Whether you should be doing anything in terms of rehabilitation (exercises or physical therapy)**
- **When you need to see your doctor again**

# **Recovery from surgery**

## Aims of protocol:

- **Promote tissue healing and repair**
- **Support the immune system to speed healing and reduce chance of infection.**
- **Protect brain cells from the deleterious effects of anesthesia / pain killers etc.**
- **Support the liver to eliminate drug residues**
- **Reduce scarring**

Laryngorhinootologie. 2010 Feb;89(2):103-13.

**The significance of perioperative  
immunonutrition [Article in German]**

Schreiter D, Rabald S, Bercker S, Kaisers U.



**Perioperative immuno-nutrition is aiming at modulating altered immunological and metabolic functions in the context of major surgery. It is defined as the supplementation of constitutionally essential substrates such as glutamine, arginine, omega-3-fatty acids or nucleotides. The application of such formula is recommended for patients undergoing major abdominal-surgical procedures and tumour surgery in the head neck area. The substitution should be given 5-7 days before and after the intervention.**

# **Restorative agents**

**Whey with immunoglobulins**

**Glutamine and arginine**

**Adaptogens, especially anabolic herbs**

**Bone broths**

**Astragalus**

**Mushrooms**

**Seaweeds**

**Coconut meat and milk**

- **Take several glasses of fresh juices daily. Good juicing items are spinach, celery, watercress, parsley, chard, beet roots, carrots, burdock root, jicama, apples, oranges grapefruit, banana and others as you wish. Always more vegetable than fruit. Leave the peel on the citrus and put the whole lot through the juicer. Dilute with water as desired and don't sweeten them.**

- **Smoothies made with fresh fruit, organic goat or sheep yoghurt, soy / rice / oat / almond milk and a Green powder (eg Nano Greens). For extra nutrients you can soak a handful of nuts overnight in water and whirl this up in the blender with everything else. You can put rice or whey protein powder into the juice or smoothie.**

- **Apple sauce, soaked and poached dried fruits, mashed banana with soy / rice / oat / almond milk.**
- **If the system is strong enough, eat lots and lots of leafy greens. Kale, collards, turnip tops, beet tops, cabbage will help to remove copper. These need to be lightly steamed and eaten with a squirt of lemon or soy sauce and a drizzling of flax seed oil, or, if the appetite is low, they can be steamed then juiced and sipped on slowly through the day.**

- **Broths and pureed soups. If you can get organic beef bones with plenty of marrow and cook them up to make stock. This will help build back the blood cells and give overall strength.**
- **Poached or soft boiled eggs.**
- **Poached fish in a good broth / stock.**
- **Oatmeal, millet porridge, congee (cream of rice), barley.**

**“ Milk thistle (*Silybum marianum*) 200 mg commenced about three weeks prior to surgery. The herb is continued right up to the day before surgery and then recommenced as soon after as possible for at least three weeks. The anticipated length of the procedure determines the amount to be taken and the duration of use post-surgery. For surgery up to two hours, the dose is three tablets a day continued for four weeks after surgery. If the surgery takes two to four hours, the suggested dose is four tablets a day for three weeks prior and six weeks after surgery. For surgery more than four hours, the dose is still four tablets a day, but it is to be continued for two to three months post-surgery.”**

## **Pain treatment post surgery**

**Corydalis capsules**

**1 – 3 caps as needed. Maximum 8 caps in 24 hours**

**super potentized formula from Natura Health Formulas**



- **Corydalis (yanhusuo) 400:1, 80% (tetrahydropalmatine)**
- **Rabdosia rubescens (dong ling cao) 10:1**
- **Panax notoginseng (tienchi), 10% notoginsenosides**
- **Chinese peony (paeonia lactiflora), 10% paeonol**
- **Dong guai (angelica sinensis), 1% ligustilides**
- **Boswellia serrata (indian frankincense), 75% boswellic acids**
- **White willow (salix alba), 30% salacin**
- **Wild turmeric (curcuma aromatica)12:1**
- **Poria cocos, (fu ling)12:1**
- **Chinese licorice (G. uralensis), 26% glycyrrhizic acid**
- **Bromelain 2400 GDU**

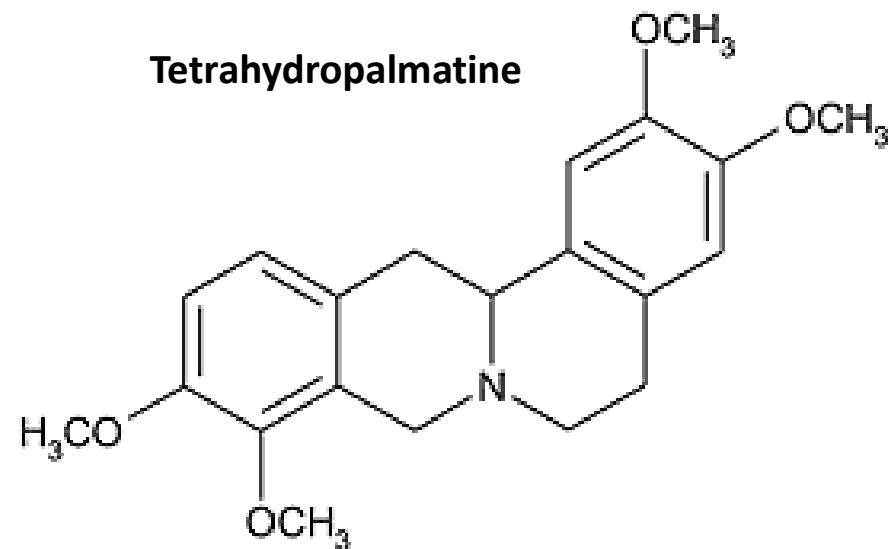
- **Antispasmodic and promotes relaxation, reduces edema and swelling**
- **Inhibits COX-2 and LOX-5, 12 and 15**
- **Reduces blood stagnation, invigorates blood: antithrombotic and fibrinolytic**
- **Blood moving and blood vitalizing, building RBC and Hemoglobin.**
- **Synergistic with chemotherapy and radiation therapy, improving both white and red blood counts, hemoglobin and platelet counts.**
- **May suppress further cancer development and/or metastasis**
- **Relaxes smooth muscles**

# Corydalis Constituents

**Alkaloids - tetrahydropalmatine, corydaline, protopine, dl-Tetrahydropalmatine, tetrahydrocoptisine, corybulbine, tetrahydrocolumbamine**

**Protoberberine type alkaloid (leonticine)**

**Tetrahydropalmatine - analgesic, sedative and tranquilizing effects.**



# Indications

## Pain relief

Rarely taken on its own, but used in combinations to alleviate pain from almost any cause.

Study in mice showed that *Corydalis yanhusuo* strengthened the analgesic function produced by electro-acupuncture.

According to Chinese Medicine it is taken where there is Qi and blood stagnation. Frying the root in vinegar may help increase the pain relieving properties

## **Cardiovascular effect**

**Invigorates blood in TCM. At least two clinical trials have been done on rabbits and rats showing that the tetrahydroberberine isolated alkaloid extract prevented platelet aggregation both in-vitro and in-vivo.**

**dl-THP has been shown to both decrease the stickiness of platelets and protect against stroke, as well as lower blood pressure and heart rate in animal studies. Additionally, it seems to exert an anti-arrhythmic action on the heart.**

- **Hu J, Xie J, Hu J, Zhang Y, Wang J, Chen R. “Effect of some drugs on electroacupuncture analgesia and cytosolic free Ca<sup>2+</sup> concentration of mice brain. Zhen Ci Yan Jiu 1994;19(1):55-8**
- **Xuan B, Wang W, Li DX. “Inhibitory effect of tetrahydroberberine on platelet aggregation and thrombosis.” Zhongguo Yao Li Xue Bao 1994 Mar;15(2):133-5**
- **Xing JF, Wang MN, Ma XY, et al. Effects of dl-tetrahydropalmatine on rabbit platelet aggregation and experimental thrombosis in rats. Chin Pharm Bull 1997;13:258–60.**
- **Lin MT, Chueh FY, Hsieh MT, et al. Antihypertensive effects of dl-tetrahydropalmatine: an active principle isolated from corydalis. Clin Exper Pharm Physiol 1996;23:738–42.**
- **Ito, Chihiro. “Chemopreventive Activity of Isoquinoline Alkaloids from Corydalis Plants” Planta med 2001; 67: 473-475**

## Pain and recovery tincture for 2 weeks after surgery

<b>Salix alba (willow)</b>	<b>20 mL</b>
<b>Glycyrrhiza glabra (licorice)</b>	<b>10 mL</b>
<b>Filipendula ulmaris (meadowsweet)</b>	<b>10 mL</b>
<b>Viburnum opulus (cranp bark)</b>	<b>10 mL</b>
<b>Tanacetum parthenium (fever few)</b>	<b>10 mL</b>
<b>Piscidia erythrina (Jamaican dogwood)</b>	<b>10 mL</b>
<b>Zingiber off. (ginger)</b>	<b>10 mL</b>
<b>Silybum marianum (milk thistle)</b>	<b>10 mL</b>
<b>Uncaria tomentosa (cats claw)</b>	<b>10 mL</b>
<b>Tabebuia impetiginosa (pau d'arco)</b>	<b>10 mL</b>
<b>Hydrastis canadensis (goldenseal)</b>	<b>5 mL</b>
<b>Panax quinquefolius (American ginseng)</b>	<b>5 mL</b>
<b>120 mL = 6 days supply dosed at 2 tsp (10 mL) twice daily in hot water</b>	



Gut

Body Fluids

Urine (over 24 hours)

Salicin  
Salicortin  
Tremulin  
Tremulacin

enzyme action in  
stomach or small intestine

Salicin  $\xrightarrow{\text{small intestine}}$  Salicin  $\xrightarrow{\text{excretion}}$  Salicin

Enzymes in distal ileum and  
upper colon

enzymes in blood and tissues

Salicyl alcohol  
(saligenin)

$\xrightarrow{\text{large intestine}}$

**LIVER**  
Salicyl alcohol

$\xrightarrow{\text{excretion}}$

Salicyl alcohol

excretion

Oxidation in blood, tissue and liver

Salicylic acid

$\xrightarrow{\text{excretion}}$

Salicylic acid conjugates  
and derivatives

## Healing and recuperation tincture for two months after surgery

begin alongside pain tincture and then keep this one up)

<b>Centella asiatica (gotu kola)</b>	<b>20 mL</b>
<b>Vaccinium myrtillus (blueberry leaf)</b>	<b>20 mL</b>
<b>Equisetum arvensis (horsetail)</b>	<b>15 mL</b>
<b>Glycyrrhiza glabra (licorice)</b>	<b>15 mL</b>
<b>Filipendula ulmaris (meadowsweet)</b>	<b>10 mL</b>
<b>Achillea millefolium (yarrow leaf and flower)</b>	<b>10 mL</b>
<b>Cinnamomum zeylandica (Cinnamon)</b>	<b>5 mL</b>
<b>Silybum marianus (milk thistle)</b>	<b>5 mL</b>

**100 ml = 10 days supply @ 1 tsp. twice daily in hot water**

# **Centella asiatica**

**The active fraction of gotu kola has shown improved healing rates after various surgical procedures and traumatic injury. Clinical trials also found that gotu kola actives helped to correct and prevent the formation of hypertrophic scars and keloid.**

- **Castellani L, Gillet JY, Lavernhe G, Dellenbach P. [Asiaticoside and cicatrization of episiotomies]. *Bull Fed Soc Gynecol Obstet Lang Fr* 1966;18(2):184-6.**
- **Sevin P. [Some observations on the use of asiaticoside (Madecassol) in general surgery.] *Progr Med (Paris)* 1962;90:23-4.**
- **Stassen P. [The use of asiaticoside in traumatology]. *Rev Med Liege* 1964;19:305-8.**
- **Bosse JP, Papillon J, Frenette G, et al. Clinical study of a new antikeloid agent. *Ann Plast Surg* 1979;3(1):13-21.**
- **Cesarone MR, Incandela L, De Sanctis MT, et al. Flight microangiopathy in medium- to long-distance flights: prevention of oedema and microcirculation alterations with total triterpenic fraction of *Centella asiatica*. *Angiology* 2001;52(Suppl 2):S33-7.**

## Topical treatment to speed healing and reduce scarring

Apply daily as soon as the incisions are closed and continuing for two months

- Base cream 74 g
- Shea butter 15 g
- Jojoba oil 4 mL
- Rosa mosqueta oil 5 mL
- Everlasting essential oil 1 mL
- Lavender essential oil 1 mL

<b><i>Supplement Item</i></b>	<b><i>With meals</i></b>	<b><i>Purpose</i></b>
<b>Botanical Treasures</b>	<b>3 caps twice daily <i>Natura product</i></b>	<b>Anti-inflammatory, adrenal tonic, for energy</b>
<b>Botanobol</b>	<b>3 caps daily <i>Natura product</i></b>	<b>Rejuvenating, restorative tonic, anabolic (building)</b>
<b>Whey protein with immunoglobulins</b>	<b>1 – 2 scoops daily</b>	<b>Immune building</b>
<b>Vitamin E succinate</b>	<b>800 iu</b>	<b>Anti-oxidant, anti-scarring</b>
<b>Power Adapt blend</b>	<b>1 tsp twice daily <i>Natura product</i></b>	<b>Adrenal booster &amp; energy blend</b>
<b>Beyond Essential fats</b>	<b>3 tsp daily <i>Natura product</i></b>	<b>Can be taken in salad dressings or smoothies, or taken off the spoon</b>
<b>GLS and MSM</b>	<b>1500 mg GLS, 3000 mg</b>	<b>To heal connective tissue</b>
<b>Potent Once a Day Multi</b>	<b>1 daily</b>	
<b>Liquid chlorophyll</b>	<b>2tbsp. 2 x daily</b>	<b>to pull drug residue from the cells.</b>

# Power Adapt

## SUPPLEMENT FACTS

Serving Size 2 ml (60 drops)

Servings per Container: 59

Amount per Serving 1200 mg

Herb Weight Equivalence

### Proprietary Blend: \*

Eleuthero root and leaf 1:1 **Russian** (*Eleutherococcus senticosus*), Schisandra seed 1:5 **Russian** (*Schisandra chinensis*), Arctic rose root 1:1 **Russian** (*Rhodiola rosea*), Korean Ginseng 1:10 **Russian** (*Panax ginseng*), Leuzea 1:1 **Russian** (*Rhaponticum carthamoides*), Fresh Ashwagandha root 1:1.5 (*Withania somnifera*), Pantokrin (Siberian spotted deer velvet antler) 1:10 (*Cornu cervi parvum*), American ginseng root 1:3 (*Panax quinquefolius*), Manchurian spikenard 1:5 **Russian** (*Aralia manchurica*), Cordyceps – CS-4 standardized 1:2 (*Cordyceps sinensis*), Fresh, Wild Oat seed 1:2 (*Avena sativa*), Licorice root 1:1 (*Glycyrrhiza glabra*)

Herb Strength Ratio 1:1.7

\*Daily Value (DV) not established

Other Ingredients: Deionized Water, Vegetable Glycerin, Grain Alcohol (25-35% by Volume), Luo Han Guo, Natural Flavor.

# Botanical Treasures

## SUPPLEMENT FACTS

Serving Size: 3.33 grams (1 level teaspoon)

Servings Per Container: 30

	Amount Per Serving	% Daily Value
Proprietary Blend	3.33 grams	*
Turmeric ( <i>Curcuma longa</i> ) C3, 95% Curcuminoids		
Green tea ( <i>Camellia sinensis</i> ) 98% Polyphenols, 80% Catechins, 45% EGCG		
Knotweed ( <i>Polygonum cuspidatum</i> ) 50% Resveratrol		
Grape seed ( <i>Vitis vinifera</i> ) 95% OPC		
Grape skin ( <i>Vitis vinifera</i> ) 30% Polyphenols Quercetin		
Amla ( <i>Embllica officinalis</i> ) 40% Tannins		
Holy Basil ( <i>Ocimum sanctum L</i> ) 2% Ursolic acid		
Ginger ( <i>Zingiber officinale</i> ) 5% Gingerols		
Rosemary ( <i>Rosemarinus officinalis</i> ) 6% Carnosic acid, 1% Rosmarinic acid, 1.5% Ursolic acid		
Luo han guo ( <i>Siraitia grosvenorii</i> ) 4:1 Extract Bromelain 2400 GDU/g		
Long pepper ( <i>Piper longum</i> ) 1.5% Piperine		

\*Percent Daily Value not established.



# Botanobol

## SUPPLEMENT FACTS

Serving Size: 3 capsules

Servings Per Container: 50

	Amount Per Serving	% Daily Value
Proprietary Blend	367 mg	*
<i>Rhaponticum carthamoides</i> (Leuzea) 5% ecdisterone, Suma ( <i>Pfaffia paniculata</i> ) 2.5% ecdisterone, Saw palmetto ( <i>Serenoa repens</i> ) 60%, <i>Epimedium grandiflorum</i> 15:1, <i>Cordyceps sinensis</i> CS-4 standardized, Ashwagandha ( <i>Withania somnifera</i> ) 4.5% withanoloids, Royal Jelly ( <i>Apis mellifica</i> ) 3:1, Mumiic ( <i>Asphaltum bitumen</i> ) "Russian Shilajit", <i>Panax ginseng</i> 80% ginsenosides, Long pepper ( <i>Piper longum</i> ) 1.5% Piperine		

\*Percent Daily Value (DV) not established.

Other ingredients: Gelatin capsule, cellulose,  
magnesium silicate, silicon dioxide.

<b><i>Item</i></b>	<b><i>At bedtime</i></b>	<b><i>Purpose</i></b>
<b>NAC</b>	<b>1000 g</b>	<b>Supports liver functions</b>
<b>Acidophilus blend</b>	<b>50 – 100 billion bacteria</b>	<b>Bowel health</b>
<b>Serrapeptase</b>	<b>2 caps daily</b>	<b>Anti-inflammatory</b>
<b>Milk thistle</b>	<b>600 mg of silymarin</b>	<b>Liver protective</b>
<b>Amino Max</b>	<b>3 capsules</b>	<b>Restorative</b>
<b>Night Gain</b>	<b>4 capsules</b>	<b>Restorative</b>

# Aminomax

## SUPPLEMENT FACTS

Serving Size: 3 capsules

Servings Per Container: 30

	Amount Per Serving	% Daily Value
Vitamin B6 (as pyridoxal alpha ketoglutarate)	12 mg	600%
Magnesium (as creatine magnesium chelate†, magnesium glycyl glutamine chelate†)	73 mg	18%
Zinc (as Zinc Arginate Chelate)†	1.5 mg	9%
Chromium (as chromium nicotinate glycinate chelate†)	112 mcg	93%
Potassium Amino Acid Complex†	37.5 mg	<1%
<b>Proprietary Blend</b>	<b>1515 mg</b>	
Creatine Magnapower® (Creatine Magnesium Chelate)†, Glutamine (as magnesium glycyl glutamine chelate†), Isoleucine, Leucine, Valine, Alpha Glycerol Phosphoryl Choline, L-Carnitine (as tartrate), Alpha Lipoic Acid, Vanadium (as vanadium nicotinate glycinate chelate†), Boron Amino Acid Complex†.		

\*Percent Daily Value not established.

Other ingredients: Gelatin capsule (gelatin, water), magnesium stearate. Contains Soy.

# Night Gain

## SUPPLEMENT FACTS

Serving Size: 4 capsules

Servings Per Container: 22.5

	Amount Per Serving	% Daily Value
Vitamin B6 (as pyridoxine alpha ketoglutarate)	11.2 mg	560%
Zinc (as zinc arginate chelate†)	3 mg	20%
Chromium (as chromium nicotinate glycinate chelate†)	50 mcg	42%
Proprietary Blend	1511 mg	*

L-Arginine, Alpha Glyceryl Phosphoryl Choline, L-Lysine (as monohydrochloride), *Longifolia jack* extract 20:1, *Mucuna pruriens* extract 40% L-Dopa, *Tribulus terrestris* extract (20% protodioscin), Chrysin, Diindolylmethane (DIM), Vanadium (as vanadium nicotinate glycinate chelate†)

\*Percent Daily Value not established.

Other Ingredients: Gelatin Capsule (gelatin, water, titanium dioxide), magnesium stearate. Contains Soy.

# Zinc

**Best taken prior to surgery, zinc reduces wound healing time, rapidly reduces wound size, and supports immune function to help ward off infection.**

**Topical zinc, such as calamine lotion, also inhibits bacteria growth on the surface of skin, helping to prevent infection. As zinc deficiency is common in the United States, most doctors recommend 30 mg/day, taken orally for four to six weeks, to bring your levels up to par before surgery.**

<http://www.naturalnews.com>

# Vitamin C

**Required to make collagen, strengthens scar tissue and also helps reduce tissue death after burns. It also helps to strengthen the immune system and fight off infection.**

**According to the Australasian College of Nutritional and Environmental Medicine, levels of this vital compound actually drop in burn victims, post-op patients, and other victims of physical trauma.**

<http://www.naturalnews.com>

# Chlorella

**Japanese studies have found Chlorella Growth Factor (CGF) to be especially effective in speeding up cell growth, a major factor in the natural repair of wounds. Various other studies reveal CGF helps heal ulcers and promote bone and muscle growth. When taken internally, it also acts as an immune-booster. Topically, it functions as a protective cleansing compound for skin.**

<http://www.naturalnews.com>



**Stop taking the following items 4 days prior to elective surgeries and start again 4 days after:**

- **evening primrose oil**
- **fish oil**
- **flax seed oil**
- **vitamin E (including tocopherols and tocotrienols)**
- **turmeric**
- **garlic**
- **ginkgo**



## Other useful agents

- **Rescue Remedy for shock**
- **Arnica cream for bruising and soreness**
- **Colloidal silver for cleaning incision**
- **Castor oil / poke oil as a local massage for enhanced lymph flow**
- **Peppermint tea or ginger tea for nausea**
- **Chamomile and skullcap for anxiety**
- **Silica to heal connective tissue**
- **Sunlight accelerates wound healing by producing vitamin D in the skin. Patients who are exposed to sunlight heal far faster than those who are not.**

**From a Chinese Medicine perspective the cut is viewed as a block of proper Qi flow in the body and the trauma is a stagnation of Qi and blood. In Chinese Medicine it is important to restore proper flow and get rid of the stagnant blood**

**Blood moving herbs include Dong quai, Corydalis yanhusuo and Polygonum multiflorum**