

Useful Complementary Remedies - Part 2

Roby Angelina Sherman, M.D.
(Internal Medicine)

with Sherri Neuroh

Wildwood Lifestyle Centre
Wildwood, GA
www.wildwoodhealth.org

Echinacea

“Our data show considerable selectivity in antibacterial activities. ...This selectivity should be considered a positive feature as it suggests that such extracts could be useful in controlling these pathogens while sparing other beneficial bacteria.”

Pharmaceutical Biology 2008;46(1,2):111-116

2

Evaluated 6 different commercial Echinacea extracts with defined composition of standard marker compounds, for their ability to inactivate 15 different human pathogenic bacteria and 2 pathogenic fungi. Echinacea extracts were derived from *E. angustifolia* roots or mixtures of *E. purpurea* roots and aerial parts, and contained different relative amounts of alkylamides and polysaccharides and similar overall concentrations of caffeic acid derivatives.

SEVERAL CONCLUSIONS CAN BE DRAWN FROM THESE RESULTS:

- 1 = the Echinacea extracts were selective in their antibacterial activities.
- 2 = different organisms showed significant differences in their patterns of sensitivity, and in some cases photosensitizers were clearly involved.
- 3 = there were no correlations between chemical composition of the extracts, in terms of known marker compounds, and their corresponding antibacterial activities.
- 4 = Different preparations of Echinacea show markedly different effects on bacteria.

Echinacea

Five important human pathogens were very sensitive to one or more extracts:

- *S. pyogenes* (pharyngitis, impetigo)
- *H. influenzae* (pneumonia, meningitis)
- *L. pneumophila* (Legionnaire's dz)
- *C. difficile* (CDAD and pseudomembranous colitis)
- *P. acne* (acne vulgaris)

Pharmaceutical Biology 2008;46(1,2):111-116

Echinacea

“Results suggest that *E. purpurea* can be immunostimulatory, immunosuppressive and/or anti-inflammatory depending on the portion of the plant and extraction method”.
(mouse study)

Food & Chemical Toxicology 2010;48(5):1170

Echinacea

“Various *Echinacea* extracts can inhibit the proliferation of *Leishmania donovani*, *Leishmania major* and *Trypanosoma brucei* parasites. At least one extract can reverse the pro-inflammatory activity of *Leishmania donovani*.”

Pharmaceutical Biology 2010;48(9):1047

Herbal Combination

Echinacea purpurea, *Astragalus membranaceus* and *Glycyrrhiza glabra* activated CD4 and CD8 T cells. The immune activation appeared greater when all three herbs were taken together.

Phytotherapy Research 2006;20(8):687-695

This activation might explain the efficacy of these herbs in mounting an effective immune response at the onset of viral and bacterial infections.

CD69 expression is reduced with age-related deterioration of the immune system, also affected in common variable immunodeficiency. Thus, these three herbs have the potential to increase CD69 expression in these conditions and may assist in their management.

Elderberries and the Flu

Sambucol® was shown to be effective *in vitro* against 10 strains of influenza virus. In a double-blind, placebo-controlled, randomized study, Sambucol reduced the duration of flu symptoms to 3-4 days. Convalescent phase serum showed a higher antibody level to influenza virus in the Sambucol® group than in the control group.

Eur. Cytokine. Netw. 2001;12(2):290-296

Elderberries and the Flu

“The H1N1 inhibition activities of the elderberry flavonoids (0.36 μM and 8.7 μM) compare favorably to the known anti-influenza activities of Oseltamivir (Tamiflu®; 0.32 μM) and Amantadine (27 μM).

Phytochemistry 2009;70(10):1255

God's Physician

“There were physicians in Christ's day and in the days of the apostles. Luke is called the beloved physician. He trusted the Lord to make him skillful in the application of remedies.” 2SM 286.3

God's Physician

“We have the sanction of the word of God for the use of remedial agencies.” MH 232.1

“The God of nature directs the human agent to use natural remedies now.” 2SM 286.4

God's Physician

“All these things teach us that we are to be very careful lest we receive radical ideas and impressions.”

2SM 287.2

God's Physician

“The Lord will bless the physician who depends on natural methods, helping every function of the human machinery to act in its own strength the part the Lord designed it to act in restoring itself to proper action.”

16 MR 288.1

God's Physician

“Physicians should have wisdom and experience, ...Then they will be constantly educating by precept and example their patients from drugs.

For they well know that the use of drugs may produce for the time being favorable results, but will implant in the system that which will cause great difficulties hereafter, which they may never recover from during their lifetime.” MM 224.4

Nature's simple remedies will aid in recovery without leaving the deadly aftereffects so often felt by those who use poisonous drugs. They destroy the power of the patient to help himself. This power the patients are to be taught to exercise by learning to eat simple, healthful foods, by refusing to overload the stomach with a variety of foods at one meal. All these things should come into the education of the sick. Talks should be given showing how to preserve health, how to shun sickness, how to rest when rest is needed. --Letter 82, 1908 (To physicians and manager at Loma Linda). {2SM 281.3}

eg. ViOXX - Rofecoxib. withdrawn by Merck 30 Sept 2004 due to concerns about increased risk of heart attack and stroke associated with long-term, high-dosage use. March 11, 2009 Scott S Reuben, revealed that data for 21 studies he had authored for the efficacy of the drug had been fabricated in order to augment the analgesic effects of the drugs. Dr. Reuben was also a former paid spokesperson for Pfizer (who owns the intellectual property rights for marketing celecoxib in the US).

Bextra - Valdecoxib. April 2005 withdrawn from US market on FDA recommendation due to increased risk of heart attack and stroke. risk of serious, sometimes fatal skin reaction, also angina and Stevens'Johnson syndrome. Sept 2, 2009 US Dept Justice fined Pfizer \$2.3 billion for its subsidiary pleading guilty to marketing 4 drugs including Bextra "with the intent to defraud or mislead". Pharmacia & UpJohn admitted to criminal conduct in the promotion of Bextra, and agreed to pay the largest criminal fine ever imposed in the US for any matter, \$1.195 billion.

Avandia - Rosiglitazone. diabetic drug. 2007 study showed it increased risk of heart attacks (congestive heart failure and myocardial ischemia). July 2010 panel recommendation to withdraw or have its sales severely restricted. Sept 2010 Europe will suspend this drugs sales entirely. USA will make it available if pt and doctor attest they have tried every other DM medication and pt is aware of drug risks. Rezulin - withdraw because of liver damage.

Avandamet - Rosiglitazone maleate and metformin hydrochloride tablets

God's Physician

“Those who desire to become missionaries are to hear instruction from competent physicians, who will teach them how to care for the sick without the use of drugs.

Such lessons will be of the highest value to those who go out to labor in foreign countries. And the simple remedies used will save many lives.” MM 231.1

God's Physician

Special instruction should be given in the art of treating the sick without the use of poisonous drugs and in harmony with the light that God has given. 9T

175.1

God's Physician

“Right and correct habits, intelligently and perseveringly practiced, will be removing the cause for disease, and the strong drugs need not be resorted to.” MM, pp. 221, 222

God's Physician

“True, drugs may not be as dangerous wisely administered as they usually are, but in the hands of many they will be hurtful to the Lord's property.” 2SM 283.3

God's Physician

“The disuse of meats, with healthful dishes nicely prepared to take the place of flesh-meats, would place a large number of the sick and suffering ones in a fair way of recovering their health, without the use of drugs.

But if the physician encourages a meat-eating diet to his invalid patients, then he will make a necessity for the use of drugs.” MM 222.4

God's Physician

- “And from the light given me, sugar, when largely used, is more injurious than meat.
- These changes should be made cautiously, and the subject should be treated in a manner not calculated to disgust and prejudice those whom we would teach and help.”

CD 328.2

God's Physician

“When persons who have suffered much from disease are relieved by an intelligent system of treatment, consisting of baths, healthful diet, proper periods of rest and exercise, and the beneficial effects of pure air, they are often led to conclude that those who successfully treat them are right in matters of religious faith, or, at least, cannot greatly err from the truth.” I T 553.2

Irritable Bowel Syndrome

The number of subjects suffering abdominal pain or discomfort ($P < 0.001$) as well as severity of abdominal pain, was significantly reduced by use of enteric-coated, delayed-release peppermint oil.

Digestive Diseases & Sciences 2010;55(5):1385

Irritable Bowel Syndrome

Commonly used probiotics for IBS include *Lactobacillus acidophilus* and *Saccharomyces boulardii*.

Alt. Compl. Ther. 2010;16(1):34

Irritable Bowel Syndrome

Carob-Psyllium balls (for diarrhea):

- 2 Tbsp carob powder
- 1 Tbsp Tahini (sesame seeds)
- 1 tsp Psyllium powder

Mix with some water and honey to make a paste.
Form into balls and refrigerate.

(Marjorie Baldwin, M.D.)

Inflammatory Bowel Disease

More than half of paediatric pt's with IBD used CAM. One out of four visited alternative therapists.

Aliment. Pharmacol. Ther. 2008;27(2):155

Study done in the Western part of Scotland
Probiotics, dairy free diet and fish oils were the most prevalent types of CAM followed by aloe and homoeopathy.

Young parental age and higher education level were independently associated with CAM usage.

Reading about CAM, friend's recommendations and internet searching were the main sources of information about CAM – this is similar to previous adult and paediatric surveys.

Frustration with the side effects of conventional medicine has been continually reported as the main reason why adult IBD pts used CAM.

Inflammatory Bowel Disease

Medication side effects have been documented as the most important parental concern for paediatric IBD patients. This justifies the need for alternative therapies with fewer or no side effects.

World J. Gastroenterol. 2005;11:1028

Inflammatory Bowel Disease

Adult IBD patients in Germany believed that a combination of methods using CAM and conventional medicine should be offered within one integrative clinical solution.

Inflamm. Bowel Dis. 2005;11:287

Inflammatory Bowel Disease

Three quarters of the IBD patients in our study stated they wanted to share the responsibility of the therapeutic decisions with their physician. (France)

Gastroentérologie Clinique et Biologique 2006;30(1):14

Inflammatory Bowel Disease

- Elimination diets.
- Pro- or prebiotics will directly influence the microbial flora.
- Immunonutrition: omega-3 fatty acids and certain polyphenols may reduce the symptoms of gut inflammation.

Mutation Research: Fundamental & Molecular Mechanisms of Mutagenesis 2007;622(1/2):70

IBD arises in part from a genetic predisposition...number of contributory genetic polymorphisms. These variant forms of genes may be associated with an abnormal response to normal luminal bacteria. The defective bacterial signal in turn leads to an excessive immune response, presenting as chronic gut inflammation in susceptible individuals.

While pharmacogenetics is being used...nutrigenetics may have even greater potential.

In many cases, IBD can be controlled through prescribing an elemental diet, which appears to act through modulating cytokine response and changing the gut microbiota.

Elimination diets have been used to individualise dietary requirements.

However, recognising the nature of the genes involved may suggest a more strategic approach.

PROBIOTIC = preparation containing viable, defined micro-organisms in sufficient numbers so as to change the microflora in a compartment of the host and thus have beneficial health effects.

PREBIOTIC = non digestible food ingredient that beneficially affects the host by stimulating growth and/or activity of one or a limited number of bacteria in the colon

Inflammatory Bowel Disease

The usage of probiotics for maintenance of remission is recommended in the updated guideline for Diagnosis and Therapy of Ulcerative Colitis by the German Society of Digestive and Metabolic Disease and the Competence Network of IBD.

BMC Compl. Alt. Med. 2006;6:19

In Germany, probiotic therapy can be prescribed for the tx of IBD and will be paid for by the statutory health insurance.

This is an excellent example for an evidence-based integration of CAM into conventional tx.

Z. Gastroenterol. 2004;42:979

Lancet 1999;354:635

Gut 2004;53:1617

Aliment. Pharmacol. Ther. 1997;11:853

Ulcerative Colitis

A variety of *Bifidophilus* preparations have shown effects of preventing relapse or maintaining remission. These include *Bifidophilus* alone, *Bifidophilus* in fermented milk products, and a synbiotic preparation.

Alt. Compl. Ther. 2010;16(1):34

Inflammatory Bowel Disease

Herbal therapies showing some promise:

- *Aloe vera* Aliment. Pharmacol. Ther. 2004;19:739
- **Wheat grass juice** Scand. J. Gastroenterol. 2002;37:444
Aliment. Pharmacol. Ther. 2006;23:341

Inflammatory Bowel Disease

- *Boswellia serrata*
- *Curcuma longa* - Curcumin

Aliment. Pharmacol. Ther. 2006;23:341

Gum resin from *B. serrata* in moderately active ulcerative colitis was compared with sulfasalazine. Remission rate in the *Boswellia* group (82%) resembled that in pts on conventional therapy (75%).
Eur. J. Med. Res. 1997;2:37 also Planta Med. 2001;67:391, also Z. Gastroenterol. 2001;39:11
{Alt. Med. Rev. 2008;13(2):165}

(Clinical remission rates in both natural and conventional tx's seemed only moderate)

RESULTS FROM LARGER RANDOMISED CONTROLLED STUDIES ARE NEEDED.

Curcumin has a range of anti-inflammatory effects

Inflammatory Bowel Disease

Results suggest that *Grifola frondosa* (Maitake) water extract ameliorates colon inflammation by suppressing production of TNF- α as well as its signaling through NF- κ B leading to the expression of inflammatory cytokines, MCP-1 and IL-8.

Exp. Mol. Med 2010;42(2):143

Inflammatory Bowel Disease

The emerging field of psychoneuroimmunology is revealing neuronal connections between the brain and the enteric nervous system, and in turn with immune and inflammatory cells in the lamina propria.

Gut 2005;54:1481

Enteric (intrinsic) nervous system is immense in magnitude and complexity – contains as many neurons as the spinal cord.

The literature interprets these results as methods by which hypnosis and acupuncture have 'scientific' validation... HOWEVER, WE KNOW (FROM THE BIBLE AND SOP) ABOUT THE VERY STRONG VERY REAL MIND-BODY RELATION. Some have died from disease the cause of which was wholly imaginary. Our thoughts change our physiology! Psychoneuroimmunology is revealing the physiologic pathways involved in the mind-body interactions.

inappropriate responses to stressors, inadequate coping techniques, lack of forgiveness, guilt, bitterness, hatred, broken homes, constantly being in a hurry and rush (especially when eating)... will affect our digestive tract.

sympathetic nervous system (stressful situations / fight and flight) effects on the digestive system...

- diverts blood flow away from the GI tract and skin via vasoconstriction
- constricts all intestinal sphinctres
- inhibits peristalsis and motor activity
- inhibition of gastrointestinal secretion

Need parasympathetic for gastric gland secretion, acceleration of peristalsis, and mediation of food digestion and indirectly, nutrient absorption.

Inflammatory Bowel Disease

Rat ulcerative colitis model: oral administration of Manuka honey and combination of sulfasalazine with manuka honey significantly reduced the colonic inflammation.

Indian J. Exp. Biol. 2008;46(8):583

Inflammatory Bowel Disease

Oral administration of Manuka honey (5g/kg and 10g/kg body weight) significantly reduced the colonic inflammation. ($P < 0.001$) (rat model)

Phytother. Res. 2008;22(11):1511

Inflammatory Bowel Disease

Manuka honey UMF™ 20+ dose dependently increased probiotics and decreased pathogens.

Int. J. Food Science & Technology 2008;43(12):2257

Inflammatory Bowel Disease

Dairy products can exacerbate IBD and restriction of consumption is beneficial.

Clin. Nutr. 2004;23:161

Can. J. Gastroenterol. 1998;12:544

Crohn's Disease - Cow's Milk?

Current epidemiological evidence strongly supports the conjecture that Crohn's disease is caused by *Mycobacterium avium* subspecies *paratuberculosis*.

Epidemiol. Infect. 2007;135:1057-1068

The authors were able to demonstrate that data exists to show that the MAP-Crohn's dz phenomenon has fulfilled at least 4 (strength of association, consistency of effect, temporality and biological plausibility) of the 6 epidemiological causal criteria outlined by Hill.

The association of MAP and Crohn's dz (based on PCR or ELISA testing) is well established.

because of the retrospective nature of case-control studies, it is not possible to ascertain whether MAP was present before the onset of the dz or whether it became established secondarily in inflamed tissues.

The occurrence of MAP in milk of productive livestock is well documented, and several studies have shown that viable MAP organisms can survive standard (high temp, short time) pasteurisation methods and the processes used for cheese production if high numbers of bacteria are present.

more thorough heat treatments, which eliminate MAP, would change the organoleptic qualities of milk and adversely affect its taste.

The Lancet Infectious Diseases 2007;7(9):607

Others argue that MAP has met both Koch's postulates and Relman's criteria for causation of Crohn's disease.

PLoS Pathog 2009;5(3): e1000234. doi:10.1371/journal.ppat.1000234

Crohn's Disease - Cow's Milk?

The association of MAP with Crohn's disease seems to be specific, but its role in the etiology of Crohn's disease remains to be defined.

The Lancet Infectious Diseases 2007;7(9):607

Professor Jon Rhodes, from the University's School of Clinical Sciences: "Mycobacterium paratuberculosis has been found within Crohn's disease tissue but there has been much controversy concerning its role in the disease. We have now shown that these Mycobacteria release a complex molecule containing a sugar, called mannose. This molecule prevents a type of white blood cells, called macrophages, from killing internalised E.Coli."

Mycobacterium paratuberculosis releases a molecule that prevents a type of white blood cell from killing E.coli bacteria found in the body. E.coli is known to be present within Crohn's disease tissue in increased numbers. Mycobacteria make their way into the body's system via cows' milk and other dairy products. In cattle causes illness called Johne's disease - a wasting, diarrheal condition. Unclear how this bacterium could trigger intestinal inflammation in humans until now.

Professor Jon Rhodes, from the University of Liverpool's School of Clinical Sciences, ScienceDaily (Dec. 13, 2007) Funded by Core and the Medical Research Council and is published in Gastroenterology.

Crohn's Disease - Animal products?

Mycobacterium avium subsp. *paratuberculosis*
can be transmitted by ingestion of raw and
processed meats.

Food & Bioprocess Technology 2010;3(1):24

Crohn's Disease

“Does the presence of these organisms initiate disease, or does the initiation of disease cause conditions suitable for the proliferation of these organisms?”

J. Gastroenterol. 2010;45:266-276

Crohn's Disease - Diet

The pre-morbid state in Crohn's disease includes a diet which is more likely to contain more refined sugar, less fibre, and less raw fruit and vegetables.

BMJ 1979;2(6193):762-4

Case Study -X

63 y/o recently retired male. 179 lb

CC: Ulcerative colitis with dysplasia of colon. Colectomy recently recommended.

Case Study - X

12/08/08-12/18/08

- 80% raw diet
- High omega-3 FA foods eg. flax oil, chia seeds etc.
- Outdoor walking after meals
- Gen. rev. to abd. with cool down shower
- Charcoal poultice to abd at hs
- Dandelion tea ...and much more
- Left feeling much improved.

Case Study - X

Repeat colonoscopy a few weeks later

One inflamed polyp removed. Benign.

“Whatever you’re doing, keep doing it, and come back in a year.”

Dear Doctor,

“Since (I was a patient at the center)

I’ve had 2 colonoscopies.

Both have shown no evidence of dysplasia.

I credit (the) program with reversing and restoring the health of my colon...

Praise God!”

14 April, 2010

Campylobacter spp.

Manuka honey shows an antimicrobial effect against *Campylobacter* spp. up to a Minimum Inhibitory Concentration of 1% (v/v) honey.

Eur. J. Clin. Microbiol. Infect. Dis. 2009;28(4):339

Diarrhea

Saccharomyces boulardii is significantly effective for the prevention of antibiotic associated diarrhea and prevention of traveler's diarrhea. Trials also show evidence for *S. boulardii* in the reduction of side-effects of *H. Pylori* treatment and the prevention of enteral nutrition-related diarrhea.

World J. Gastroenterol. 2010;16(18):2202

The use of *Saccharomyces boulardii* as a therapeutic probiotic is supported by its mechanism of action, pharmacokinetics and efficacy from animal models and clinical trials. The overall safety profile for *S. boulardii* is beneficial, and it can be recommended for several diseases.

Other strains may have probiotic properties, but clinical efficacy evidence is still deficient for other strains. See table 6 in article for dosage guidelines. Typically the daily dose is $>10^9$ /d, the duration of treatment can vary from 7 days to 6 months and it may be given alone or as an adjunctive treatment, depending on the disease indication.

Generally, continue *S. boulardii* for several days to several weeks after the course of antibiotics is stopped.

More clinical trials are encouraged for the treatment of chronic diseases (eg. Crohn's, irritable bowel syndrome and HIV-related diarrhoea) and the prevention of *C.difficile* dz recurrences.

CONTRAINDICATION: if allergic or hypersensitive to yeast or species in the *Saccharomycetaceae* family.

Use cautiously in immunocompromised or critically ill patients.

use cautiously with indwelling central venous catheters, colitis, cancer or constipation.

use cautiously in the elderly, in individuals undergoing chemo and in infants.

avoid with a yeast infection.

avoid if pregnant or breastfeeding.

Alt. Compl. Ther. 2010;16(1):34

Diarrhea

Several trials suggest the use of *Saccharomyces boulardii* may be advantageous in both the reduction of stool frequency per day and the duration of diarrhea in children.

Alt. Compl. Ther 2010;16(1):34

Diarrhea

Probiotics may reduce duration of symptoms in adults and children with infectious diarrhea by 17-30 hours. Effective forms include *Lactobacillus* strain GG, *Lactobacillus reuteri*, combination *Lactobacillus rhamnosus* and *Lactobacillus reuteri*, and combination *Lactobacillus acidophilus* and *Lactobacillus bifidus*.

Alt. Compl. Ther. 2010;16(1):34

Diarrhea

Multiple studies in developing countries found that zinc supplementation may reduce the severity and duration of diarrhea in children, especially those that are malnourished and with low zinc levels.

Alt. Compl. Ther. 2010;16(1):34

Hydrotherapy

“We had confidence in the use of water as one of God’s appointed remedies... we felt that it might be duty to take him to Dansville, N.Y., where he could rest and where we could have the care of those well skilled as hydropathic physicians.” LS 169.3

“But my own vital energies were much too exhausted for me to attempt hydropathic remedies in my husband’s case.”

“We remained in Dansville about three months.
Every day, excepting Sabbath and first day, we took treatment.”

....(returned to Battle Creek eventually)

“After being cut off from all active labour for 15 months, we ventured out once more together to work among the churches.” LS 172.3

Hydrotherapy

“...if bathing is practiced...the muscles become more flexible, the mind and body are alike invigorated, the intellect is made brighter, and every faculty becomes livelier.

The bath is a soother of the nerves. It promotes general perspiration, quickens the circulation, overcomes obstructions in the system, and acts beneficially on the kidneys and urinary organs.”

3T 70.1

Hydrotherapy

“While water is recognized as without doubt one of the most valuable of all natural agencies, the writer has never permitted himself to be classed with those enthusiasts who place their trust in it as an exclusive measure.”

John Harvey Kellogg, M.D. - Rational Hydrotherapy, pg. viii

Postoperative Hydrotherapy

“There is no other remedy by which the movements of the blood and the blood supply, both general and local, and in fact every form of vital activity, may be so readily controlled as by hydriatic applications.”

Rational Hydrotherapy, pg. viii

Postoperative Hydrotherapy

Sitz bath bid - s/p closed lateral sphincterotomy

Patients from the control group experienced significant anal burning compared with patients from the sitz bath group ($P < 0.0001$)

World Journal of Surgery 2007;31(7):1480

Postoperative Hydrotherapy

Results indicate that a water spray method could provide a safe and reliable alternative to the sitz bath for post-hemorrhoidectomy care. Patients find the spray method more convenient and report greater satisfaction.

J. Gastrointest. Surg. 2009;13(7):1274

Preparation of sitz bath is sometimes difficult for patients. Proposed a water spray method as alternative to sitz bath – post-hemorrhoidectomy period.
n=120
all received analgesics and fibre rich diet s/p hemorrhoidectomy

no significant differences in scores for post-operative pain, irritation or hygiene between groups.
The water spray group reported significantly greater convenience ($P<0.05$) and higher overall satisfaction ($P<0.05$)

At end of 4-week post-op period: 90% of water spray group and 93% of sitz bath group showed complete wound healing.
no significant differences in post-op complications between groups.

Postoperative Hydrotherapy

At day 14 post-surgery, hip abductor strength was significantly greater after aquatic physiotherapy intervention than additional ward treatment ($P=0.001$) or water exercise ($P=0.011$).

Arch. Phys. Med. Rehabil. 2009;90(5):745

To evaluate the effect of inpatient aquatic physiotherapy in addition to usual ward physiotherapy on the recovery of strength, function and gait speed after total hip or knee replacement surgery.
n=65
participants randomly assigned to receive supplementary PT starting day 4:
- aquatic physiotherapy
- nonspecific water exercise
- additional ward physiotherapy

Relative differences favored the aquatic physiotherapy intervention at day 14. No adverse events occurred with early aquatic intervention.
Aquatic physiotherapy can be safely considered in this early postoperative phase.

Postoperative Hydrotherapy

Statistical analysis indicated that WOMAC subscales were significantly lower for all geriatric total hip arthroplasty patients treated with hydrotherapy.

The benefits at discharge still remained after 6 months.

Arch. Gerontol. Geriatr. 2010;50(1):92

Postoperative Hydrotherapy

Patients treated with hydrotherapy showed greater improvements in the investigated items of coordination and strength than patients treated with “standard rehabilitation program”.

A. Orthop. Ihre Grenzgeb. 2001;139(4):352

(German) English abstract...

Investigating the therapeutic effect of a special type of hydrotherapy.

n=25 doing hydrotherapy

n= 38 standard rehab

n=20 healthy persons

3 wks hydrotherapy training during in-pt rehab. several diagnostic methods (EMG mapping, Isokinetics, ultrasound) were applied to objectify and quantify changes in muscular coordination and strength at 4, 7 and 26 wks postoperative.

FOR EXAMPLE, IN THE HYDRO GROUP, SIGNIFICANTLY BETTER CONTRACTION CAPACITY OF THE M. VASTUS INTERMEDIUS WAS MEASURED.

The intensive hydrotherapy was tolerated by all patients and reached good acceptance.

The investigated hydrotherapy leads to better muscular coordination and strength, which can provoke a better stabilization of the knee joint. Therefore the early and intensive application of hydrotherapy for improving coordination and strength in the rehabilitation of patients with total knee arthroplasty is advisable.

Hydrotherapy in Surgical Cases - J.H.Kellogg M.D.

- Contusions
- Fractures
- Dislocations
- Sprains
- Pott's Disease
- Scoliosis
- Uterine displacements
- Abdominal surgery
- Surgical shock
- Anesthesia
- Hemorrhage
- Surgical fever

Four-footed Hydrotherapy

“The horse called Parson was very sick. We feared he would die. We doctored him as well as we could, putting hot flannel blankets around him. He was relieved after several applications. We learned that hydrotherapy is for animals as well as for human beings.”

3MR 168.3

Hawksmoor Hydrotherapy Referral and Training Centre

“Du” 8y/o Pointer

Dx: Caudal Cervical Spondylomyelopathy (MRI)

2 surgeries on C4-5 and C5-6 (Jan, Feb 2010)

Hydro prescribed to rebuild muscular weakness, and increase ROM.

Thanks to Ms. Susan Hawkins for permission to use “Du’s” case study.

The Department of Defense

Military Working Dog Veterinary Service Hospital,

Lackland Air Force Base, Texas

\$13 + million Canine military hospital opened in 2008 at Lackland AF Base. Serves as the Walter Reed of the veterinary world. equipped with OR's, ICU, digital radiography, CT scanning equipment and hydrotherapy treadmill.

23 000 square feet dedicated to the care of the dogs. The hospital staff includes specialists in internal medicine, surgery, radiology, behavior, pathology and epidemiology. The hospital also maintains complete medical and radiographic records for all military working dogs, past and present. This collection represents the largest database of technical information on military working dogs in the world. Because these dogs are specially bred and trained they are worth thousands of dollars, and an immense amount of time and expertise are available for their care. CT and MRI imaging for these canine patients are available through the Air Force's Wilford Hall Medical Center. The dogs have a higher priority than some of the people – retired generals have been bumped off the schedule so a working dog can have priority access to the MRI machine!

The approximate monthly workload at this veterinary hospital includes over 3000 outpatient visits, 1000 diagnostic procedures such as ultrasound scans or MRIs, 60 surgical and dental procedures, 30 procurement examinations and 60 telephone, e-mail and tele-radiology consultations.

Takes Time and Effort

“The use of natural remedies requires an amount of care and effort that many are not willing to give. Nature’s process of healing and upbuilding is gradual, and to the impatient it seems slow. The surrender of hurtful indulgences requires sacrifice.”

CG 366.2

Takes Time and Effort

“God’s miracles do not always bear the outward semblance of miracles. Often they are brought about in a way which looks like the natural course of events. When we pray for the sick, we also work for them. We answer our own prayers by using the remedies within our reach.” 2SM 346.3

Charcoal

Not a cure-all, however, very effective when used judiciously.

Caution: bowel-obstruction with excessive internal use

Caution: aspiration of charcoal dust

Caution: may “tattoo” or stain open wounds

Charcoal

Useful for:

“Inflammation of the bowels and bloody dysentery” (taken internally, with poultice to stomach and bowels).

“In half an hour there was a change for the better”. 2SM 299

Charcoal

18 month-old male.

Painful swelling on knee for several days - insect bite? Screamed with pain all night.

Charcoal flax poultice applied. Child slept.

Nurse drained swelling. 2SM 299.3

Charcoal

“To students when injured with bruised hands and suffering with inflammation, I have prescribed this simple remedy (pulverized charcoal, placed in a bag and used in fomentations...if wet in smartweed boiled, it is still better) with perfect success. The poison of inflammation was overcome, the pain removed, and healing went on rapidly.” ...cont...

Charcoal

“The most severe inflammation of the eyes will be relieved by a poultice of charcoal, put in a bag, and dipped in hot or cold water, as will best suit the case. This works like a charm.

I expect you will laugh at this; but if I could give this remedy some outlandish name that no one knew but myself, it would have greater influence. . . . But the simplest remedies may assist nature, and leave no baleful effects after their use.” --Letter 82, 1897 (To Dr. J. H. Kellogg)

Charcoal

“My mother had told me that snake bites and the sting of reptiles and poisonous insects could often be rendered harmless by the use of charcoal poultices.” 2SM 295.3

Takes Time and Effort

“Natural means, used in accordance with God’s will, bring about supernatural results. We ask for a miracle, and the Lord directs the mind to some simple remedy.”

2SM 346.4

Charcoal Case Study

24 y/o Hispanic female

Multiple yellow jacket stings,

Estimated 10 to back of head (hair in ponytails),

Estimated 20 or more to shoulders, arms and legs.

Charcoal Case Study

- Jumped in creek.
- Becoming non-responsive.
- Sent for vehicle and charcoal.
- Legs elevated, wet shirt removed and dry sweatshirt put on.
- Mud applied to stings.
- Started carrying to road.

Charcoal Case Study

1/2 way up creek to road, charcoal arrived.

Able to drink about 1 C water with about 2-3 t charcoal, then 1/2 cup water with extra charcoal.

Also poured thick charcoal water over back of head - which was bothering her the most.

Charcoal Case Study

- Loaded in car and driven to campsite (Physician there.)
- BP 0/0; HR 50
- Given charcoal water to drink, wet clothes removed, wrapped in blankets, charcoal patches applied to stings.
- Back of head submerged in basin of charcoal water.



Picture used with permission.

Charcoal Case Study

- After about 15 minutes, opened eyes, smiled.
- At campfire for evening worship.
- Next morning, cooking breakfast.
- “Phenocane” for pain and inflammation
- Tea tree gel applied to stings to relieve itching and pain.



Picture used with permission.

Diabetes II

“We have come to believe that the traditional approach to the care of diabetes and other chronic disease may actually promote noncompliance.”

JAMA 2000;284(13):1709

J. Am. Board Fam. Med. 2010;23:171

J. Manag. Care Pharm. 2008;14(6)S-b:S21

Clinical Diabetes 2004;22(3):123

Need a different treatment approach for chronic, as opposed to acute, disease.
eg. **more than 95% of diabetes care is done by the patient!**

Eg. DM, type II. When a health professional takes responsibility for the care of this chronic disease, this method is likely to fail. It cannot be treated in same manner as an acute disease process, where the health professional takes full responsibility for all aspects of treatment.

Current health care systems are designed to deliver acute, symptom-driven care. Chronic diseases, eg. DM II require a collaborative, daily self-managed plan.

Diabetes is a SELF-MANAGED disease. The pt needs to be educated as the primary decision-maker and responsible party, under the medical expertise and guidance of the clinician.
Patients need to be empowered to make and sustain changes in their behavior – this eliminates the problem of compliance vs non-compliance....because a shift is made to where the patient is making the daily decisions, not the physician.

Diabetes II

Well informed and motivated patients were more successful in obtaining and maintaining good control of their risk factors.

J.Am. Soc. Nephrol. 2005;16:22

Diabetes II

“Insulin therapy is the oldest available diabetes treatment and still by far the most effective agent when adequately dosed..”

Expert Rev. Cardiovasc. Ther. 2010;8(3):483

Insulin can dramatically improve glycemic control over a short period of time and has excellent durability.

Healthcare professionals fear:

- pt's anger over oral medication failure
- pt noncompliance with injectable regimen
- losing pt to another provider because of tx dissatisfaction or tx related side effects.

50% of physicians delay initiating insulin until it is considered absolutely essential...(usually too late).

Pt fears:

- fear of hypoglycemia
- weight gain
- LS changes and restrictions
- disease progression
- needle phobia
- social and cultural barriers that associate such tx choice with end-of-life.

Diabetes II

“Yet, surprisingly, the most commonly applied treatment paradigm involves a stepwise addition of single hypoglycemic agents triggered by the presence of clinically significant and persistent hyperglycemia.

We call this a ‘treat-to-failure’ approach...”

Expert Rev. Cardiovasc. Ther. 2010;8(4):483

Diabetes II

Patient concerns regarding insulin use:

- Rates of hypoglycemia among insulin users were comparable to oral agent users.
- Insulin use in conjunction with lifestyle interventions achieves a sustained weight control. Weight gain is a real consequence of insulin therapy, yet its magnitude is comparable to the oral regimen, and is not associated with worsening in glycemic control.

Expert Rev. Cardiovasc. Ther. 2010;8(4):483

...cont... Many of the aforementioned concerns have either proved to be overstated, or can be easily overcome with adequate patient (or provider) education, as demonstrated by several recent clinical trials.

Trials show superior HbA1c with insulin usage. Also that the increased complexity of an insulin regimen did not deter pt's from using the product consistently. Pt satisfaction and quality of life were not affected by insulin tx and showed improvement over time with respect to social worries. After 18 mo, pts reported satisfaction with insulin and willingness to continue the tx. Diabetes Care 2009;32:1789

POOR ACCEPTANCE OF INSULIN TX BY PT'S IS A MYTH... IN FACT IT APPEARS THAT THE 'INSULIN RESISTANCE' LIES MOSTLY ON THE PROVIDER SIDE... ie. physicians are the ones resistant to the use of insulin!

Diabetes II

The American Diabetes Association consensus recommends the early use of insulin, while commonly used agents, such as thiazolidinediones and sulphonylureas, are considered second line.

Diabetes Care 2009;32:193

Diabetes II

In clinical trials in individuals with DM II, low-fat vegan diets improve glycemic control to a greater extent than conventional diabetes diets.

Nutr. Rev. 2009;67(5):255

Diabetes II

Long-term adherence (17 years) to a diet that included at least weekly meat intake was associated with a 74% increase in odds of DM relative to long-term adherence to a vegetarian diet (zero meat intake).

Ann. Nutr. Metab. 2010;56(3):232

Diabetes II

Reduction of the consumption of processed meat may help prevent the global epidemic of DM II.

British Jnl. of Nutrition 2010;103:1817

High total meat consumption was a risk factor of DM II. especially processed meat – elevated Na the culprit?

Connected with diet, low consumption of meat has been suggested as a protective factor of diabetes.
This study examined the association between the consumption of total meat or the specific types of meats and the risk of DM II.

Study done over 12 yrs of f/u with 24 845 participants.

Adjusted for age and intervention.

Diabetic Neuropathy

A low-fat, whole-food vegan diet, coupled with daily walking exercise, can lead to rapid remission of neuropathic pain in individuals who experience neuropathy from DM II.

Med Hypotheses 2002;58(6):476-86

Diabetes II - Punicic Acid

Dietary PUA (Punicic acid) decreased fasting plasma glucose concentrations, improved the glucose-normalizing ability, and suppressed inflammation in the skeletal muscles and adipose tissues.

J. Am. Coll. Nutr. 2009;28(2):184-195

PUA (Punicic acid) = conjugated linolenic acid isomer (**polyunsaturated fatty acid**) found in pomegranate. 65% of fatty acids in pomegranate. obtained from pomegranate seed oil. Also found in seed oils of snake gourd and bitter gourd (bitter melon).

PPAR-alpha receptors = involved in regulation of fatty acid uptake, oxidation; inflammation and vascular function

PPAR-gamma = decreases uptake of fatty acid and glucose; stimulates glucose oxidation; decreases inflammation and ameliorates insulin resistance.

Loss of PPAR-gamma in immune cells impairs their ability to ameliorate diabetes and inflammation.

Synthetic PPAR-alpha and -gamma agonists have been widely used in tx of dyslipidaemia, hyperglycaemia and their complications. BUT HAVE SIDE EFFECTS.

However there are natural PPAR-activators that can add benefits to glucose control without detrimental side effects of PPAR activating pharmaceuticals. eg. dietary PUA from pomegranates etc.

Whole grapes stimulate both PPAR-alpha and -gamma activity. Hypertension 2010;55(5):1179-1185

Tart cherries also increase PPAR-alpha and -gamma activity and decrease inflammation as well. J. Med. Food 2009;12(5):935-942

Citrus fruits contain 2 phytochemicals that improve PPAR-gamma activity and increase adiponectin. Phytother. Res. 2008;22(10):1400-1403

Diabetes II - Whole grains

Harvard School of Public Health study:

Whole-grain and bran intakes were associated with reduced all-cause and CVD-specific mortality in women with DM.

Circulation 2010;121(20):2162-2168

Diabetes II - Tree Nuts

Regular consumption of nuts is associated with a 44% lower risk of cardiovascular disease and improved lipid profile in DM II women.

J. Nutr. 2009;139(7):1333-13338

Diabetes II - Legumes

Over 41 studies show that legumes improve glucose levels in both diabetic and non-diabetic individuals.

Diabetologia June 13, 2009

Diabetes II - Soy

Consumption of soy protein reduced urinary urea nitrogen, proteinuria, blood sodium and serum phosphorus compared with animal protein.

J. Ren. Nutr.2009;19(6):479-486

Diabetes II and Mg²⁺

Low magnesium levels are associated with impaired glucose tolerance and the development of DM II.

Eur. J. Clin. Invest. 2008;38(6):389-396

Magnesium improves insulin sensitivity and also exerts anti-inflammatory activity.

Hypomagnesemia is associated with an increased incidence of DM, metabolic syndrome...
Magnes. Res. 2010 Mar 31

Chronic Mg deficiency results in excessive production of O₂ derived free radicals and low grade inflammation. Curr. Pharm Des. 2010;16(7):832-839

Low levels of Mg are related to increased LDL oxidation and increased risk for clotting. Magnes. Res. 2010 May 27

US government study shows a staggering 68% of Americans do not consume the recommended daily intake of magnesium.
19% don't even consume 1/2 of the RDI.

Sugar consumption, refined foods, alcohol, caffeine and long-term nursing home care reduce magnesium levels in the body.

Diabetes II and Mg²⁺

Magnesium deficiency can be predictive of kidney disease later in DM II.

Clin. Nephrol. 2009;71(4):375-379

Diabetes II and Mg²⁺

Oral Mg supplementation with MgCl₂ significantly reduces systolic BP and diastolic BP in diabetic hypertensive adults with low magnesium levels.

J. Hum. Hypertens. 2009;23(4):245-251

Diabetes II - Turmeric

In vivo experiments with Curcumin from turmeric (*Curcuma longa*) have shown that curcumin is able to suppress sorbitol accumulation in human erythrocytes under high glucose conditions.

FEBS Lett. 2009;583(22):388-395

Diabetes II - Ginseng

Korean ginseng (*Panax ginseng*) displays beneficial effects in the treatment of diabetes at least in part via the stimulation of insulin release in a glucose-independent manner.

Journal of Ethnopharmacology 2008;120(2):190

Diabetes II - Exercise

Exercise improves endothelial dysfunction independently of glycemic control and insulin sensitivity in patients with DM II.

J.Atheroscler.Thromb. 2010 May 13 (Epub ahead of print)

Diabetes II - Exercise

Light physical activity has an acute blood glucose reducing effect...even after intake of a large dose of high glycemic food.

Prev. Med. 2006;42(5):369-371

- and that of a magnitude similar to that obtained by hypoglycemic drugs.

Note: this is a small study.

9 young, 10 middle aged - sedentary women

10 young and 10 middle aged - trained women

BG checked: resting, fasting, p15 min for next 120 min.

done over 2 days.

In all trials, irrespective of age and training condition, light bicycling for 30 minutes after the carb meal blunted the rise in BG.

Diabetes II - Exercise

Even slow post-meal walking can reduce the blood glucose response to a carbohydrate-rich meal.

Appl. Physiol. Nutr. Metab. 2009;34(6):1087-1092

Postprandial [BG] is a risk factor for the development of cardiovascular diseases and diabetes, even at states well below hyperglycemic levels.

This followed up on Hostmark's research done (Prev Med 42(5):369-371

NB: no need to go into oxygen debt. (cardiovascular risk...)

Small study - 14 women >50y/o
3 experiments in random crossover
after carb rich meal they were
1) seated (control)
2) slow postmeal walking for 15 minutes
3) slow postmeal walking for 40 minutes.

fasting sugars, and 11 points during each experiment.

In 40 min walk:
pp glucose value was delayed (p=0.001)
incremental area under 2-h blood glucose curve was reduced (p=0.014)
negative relationship between 2h blood glucose curve and walking time (p=0.016)

Magnitude of effect related to duration of walking and the magnitude of the pp BG response when resting after a carb rich meal.

Walking after dinner lowers glucose levels more than exercising before dinner or not at all.

American Jnl. of Nursing 2010;110(5):62

Diabetes II - Sleep

Sleep loss and sleep disturbances could contribute to the development of insulin resistance and DM II either directly or indirectly.

Jnl. Applied Physiology 2005;99:2008-2019

Directly: by means of having a deleterious effect on components of glc regulation.

Indirectly: a dysregulation of appetite, leading to weight gain and obesity, a major risk factor for insulin resistance and DM.

BOTH BETA-CELL RESPONSIVENESS AND INSULIN SENSITIVITY ARE INFLUENCED BY SLEEP. discussed in article in depth.
Putative mechanisms by which sleep deprivation may result to weight gain, altered glucose metabolism, and DM II.

Likely that the adverse impact of sleep loss on glc tolerance involves multiple pathways.

More people sleep <6hr/day than a few decades ago.
Curtailment of bedtime to the minimum tolerable = widespread habit of the 24-hr society.
Chronic sleep loss may also be due to pathological conditions eg. insomnia, sleep apnea.

Intriguingly, the dramatic increase in the incidence of obesity and diabetes seems to have developed over the same period of time as the progressive decrease in self-reported sleep duration.
THE 2 SECULAR TRENDS MIRROR EACH OTHER OVER THE SECOND 1/2 OF THE 20TH CENTURY.

2007 data suggests the relationship between sleep restriction, weight gain and diabetes risk may involve at least three pathways:

- 1) alterations in glucose metabolism
- 2) up-regulation of appetite
- 3) decreased energy expenditure.

Sleep Medicine Reviews 2007;11(3):163-178

Diabetes II - Sleep

There is a significant association between short sleep at baseline and risk of developing symptomatic diabetes 10 years later. (after adjustments)

Arch. Intern. Med. 2003;163:205-209

Nurses Health Study.

Adjustments made for:

- 1) shift work in 1988
- 2) hypercholesterolemia
- 3) HTN
- 4) smoking
- 5) snoring
- 6) exercise
- 7) alcohol
- 8) depression in 1992
- 9) postmenopausal hormone use
- 10) family hx of DM.

same results in Sleep Heart Health Study.

results = increased risk of DM II or impaired glc tolerance among participants who reported sleeping 6hrs or less / or 9hrs or more per night after adjustment for:

- 1) age
- 2) sex
- 3) ethnicity
- 4) study size
- 5) waist circumference

SLEEP DURATION OF 6hrs or less, or 9hrs or more IS ASSOCIATED WITH INCREASED PREVALENCE OF DM AND IGT (impaired glc tolerance).

BECAUSE THIS EFFECT WAS PRESENT IN SUBJECTS WITHOUT INSOMNIA, VOLUNTARY SLEEP RESTRICTION MAY CONTRIBUTE TO THE LARGE PUBLIC HEALTH BURDEN OF DM.

Arch. Intern. Med. 2005;165:863-867

In 2005:

EIGHT INDEPENDENT STUDIES HAVE INDICATED THAT CHRONIC SHORT AND/OR POOR SLEEP MAY INCREASE THE RISK OF OBESITY.

FOUR STUDIES HAVE FOUND AN INCREASED RISK OF DM II WITH SHORT SLEEP.

Diabetes II - Sleep

Partial sleep deprivation during only a single night induces insulin resistance in multiple metabolic pathways in healthy subjects.

J.Clinical Endocrin. & Metab. 2010;95(6):2963-2968

Diabetes II - ANS Activity

Pancreatic β -cell function is influenced by autonomic nervous activity.

J.Applied Physiol. 2005;99:2008-2019

Diabetes II - Fenugreek

Fenugreek seeds (*Trigonella foenum-graecum*) can be used as an adjuvant in the control of type 2 DM in the form of soaked in hot water.

Int. J. Vitam. Nutr. Res. 2009;79(1):34-39

small trial. 24 down to 18 pts. 8 wks
Fasting blood sugar, triglycerides and VLDL-C decreased significantly.

Also found that fenugreek diet significantly reduced fasting blood sugar and improved the glucose tolerance test.
54% reduction in 24-hr urinary glucose excretion.
serum total cholesterol, LDL and VLDL cholesterol and Triglycerides were also significantly reduce. HDL was unchanged.

Confirmed animal studies done previously from Br. J. Nutr. 2007;97(3):514-521
Showed that the soluble dietary fraction of fenugreek seeds exerts anti-diabetic effects mediated through inhibition of carbohydrate digestion and absorption, and enhancement of peripheral insulin action.

In vivo animal study showed that the hypoglycaemic effect of fenugreek seed extract is mediated, at least in part, by the activation of an insulin signaling pathway in adipocytes and liver cells.
Br. J. Pharmacol. 2005;146(1):41-48

Diabetes II - Fenugreek Oil

Fenugreek oil appears efficacious in the amelioration of diabetes, hematological status, and renal toxicity. (rat study)

Immunopharmacol. Immunotoxicol. 2010, Jan 25. [Epub ahead of print]

Immunological disorders and nephropathy are among the most frequent and serious complications of DM.
Animal study (rats)

Fenugreek oil's effects may be attributed to its:

- 1) immunomodulatory activity
- 2) insulin stimulation action
- 3) antioxidant potential.

results:

- 1) fewer infiltrated inflammatory cells (WBC numbers reverted back to near normal)
- 2) significantly improved BG levels, glucose tolerance and insulin sensitivity.
- 3) less pancreatic islet and beta cell damage
- 4) low activities of superoxide dismutase, catalase, glutathione peroxidase, reduced glutathione in kidney
- 5) decreased levels of lipid peroxidation, creatinine, albumin and urea.
- 6) restored almost a normal architecture of pancreas and kidney.

The role of fenugreek seed powder in reversing the diabetic state at the cellular level besides the metabolic normalization further proves its potential as an antidiabetic agent.
Mol. Cell. Biochem. 2004;266(1-2):151-159

Histopathological studies showed liver degenerative and early nephropathic changes in diabetic rats.
Ultrastructure of the diabetic liver revealed a reduction in rough endoplasmic reticulum and swelling of mitochondria in hepatocytes.

Fenugreek seed powder orally to diabetic rats effectively prevented alteration in activities of 2 enzymes and partially prevented the structural abnormalities.

Diabetes II - *Gymnema* *sylvestre*

Gymnemic acids have antidiabetic, anti-sweetener and anti-inflammatory activities.

Clin. Biochem. Nutr. 2007;41(2):77-81

The anti-diabetic array of molecules has been identified as a group of closely related gymnemic acids after it was successfully isolated and purified from the leaves of *Gymnema sylvestre*.

The atomic arrangement of gymnemic acid molecules is similar to that of glucose molecules. these molecules fill the receptor location in the absorptive external layers of the intestine thereby preventing the sugar molecules absorption by the intestine, which results in low blood sugar level. (also fills receptor locations on taste buds, thereby preventing its activation by sugar molecules present in food, thereby curbing the sugar craving.)

When *Gymnema* leaf extract is administered to a diabetic patient, there is stimulation of the pancreas by virtue of which there is an increase in insulin release.

Possible mechanisms by which the leaves and especially Gymnemic acids from *G. sylvestre* exert hypoglycemic effects:

- 1) increases secretion of insulin
- 2) promotes regeneration of islet cells
- 3) increases utilization of glucose (increases activities of enzymes responsible for utilization of glucose by insulin-dependent pathways, an increase in phosphorylase activity, decrease in gluconeogenic enzymes and sorbitol dehydrogenase)
- 4) causes inhibition of glucose absorption from intestine

Diabetes II - *Gymnema sylvestre*

Dihydroxy-gymnemic-triacetate, the compound from *Gymnema sylvestre*, possessed hypoglycemic and hypolipidemic activity in long-term treatment and hence it could be used as a drug for treating diabetes.

J. Ethnopharmacol. 2009;126(2):339-344

Diabetes II

- ...see extra speaker's notes...

The following have been experimentally documented to possess antidiabetic potential*:

Fenugreek seeds (*Trigonella foenum-graecum*)

Garlic (*Allium sativum*)

Onion (*Allium cepa*)

Turmeric (*Curcuma longa*)

Intl. J. Food Sci.Nutr. 2005;56(6):399-414

*Extracts or active principles were examined in animal and clinical trial

In a limited number of studies, the following have been reported to be hypoglycaemic:

Cumin seeds (*Cuminum cyminum*)

Ginger (*Zingiber officinale*)

Mustard (*Brassica nigra*)

Curry leaves (*Murraya koenigii*)

Coriander (*Coriandrum sativum*)

Intl. J. Food Sci.Nutr. 2005;56(6):399-414

Diabetes II - Vitamin B₁₂

Long-term treatment with Metformin increases the risk of Vitamin B-12 deficiency.

BMJ 2010;340:c2181

Compared with placebo, Metformin treatment was associated with a mean decrease in: [Vit B12] of -19% (P<0.001)
[folate] -5% (P=0.033)
and a mean increase in:
[homocysteine] 5% (P=0.091)

The vit B12 def raised homocysteine concentrations.
Vit B12 def is preventable. Therefore regular measurement of vit B12 concentrations during long term Metformin treatment should be strongly considered.

Endocrinologist 2010;20(1):38-40

small study in Pakistan.

Conclusions: vit B12 def is common among patients with DM II, can be related to nutrition.

In addition to intensive glycemic control, vit B12 supplementation should be considered for tx'ing diabetic neuropathy.

Need aggressive, early dx and tx to prevent complications of unnecessary vit B12 def.

Diabetes II - Vitamin B12

First case: Metformin-induced Vitamin B-12 deficiency presenting as peripheral neuropathy.

Southern Medical Journal 2010;103(3):265-267

Chronic Metformin use results in Vit B12 def in 30% of patients.

Exhaustion of B12 stores usually occurs after 12-15 yrs of absolute B12 def.
Metformin in USA for 15 yrs.

Vit B12 may present without anaemia and as a peripheral neuropathy. may be misdiagnosed as diabetic neuropathy.

Failure to diagnose the cause of the neuropathy will result in progression of central and/or peripheral neuronal damage which can be arrested but not reversed with Vit B12 replacement.

Diabetes II - Prenatal Epigenetics?

India: Children born to women with 'high folic acid and low B12' had higher adiposity and insulin resistance.

Br. J. Diabetes Vasc. Dis. 2010;10:109-114

Increasing evidence that periconceptional nutritional status influences adult health. may provide some clues to the epidemic of DM II and cardiovascular dz.
Maternal imbalance of high folic acid and low vitamin B12 is associated with higher metabolic risk in the offspring.

Epigenetic regulation: B vit's and folic acid provide methyl groups for DNA methylation, this may provide some clues to the epidemic of DM II and cardiovascular dz.

Mandatory folic acid fortification... studies shown that with adequate folic acid, neural tube defects due to B12 def have tripled.

Imbalance of high folic acid and low B12 causes cognitive impairment in elderly.

B 12 DEFICIENCY IS INCREASING IN COUNTRIES WITH MANDATORY FOLIC ACID FORTIFICATION.

Animal studies clearly provide evidence for epigenetic alterations of DNA methylation by nutrients during the periconceptional period.
Lambs born to sheep fed a 'methyl-deficient' diet had higher adiposity, higher insulin resistance and higher blood pressure.
Proc. Natl. Acad. Sci USA 2007;104:19351-6 Sinclair et al.,

Diabetes II - Vitamin D

25-(OH)D concentration was independently associated with both insulin sensitivity and β -cell function among individuals at risk of DM II.

Diabetes Care 2010;33(6):1379-1381

After adjustments were made for:

- 1) sociodemographics,
- 2) physical activity
- 3) supplement use
- 4) parathyroid hormone
- 5) BMI

Available research seems to indicate that Vitamin D deficiency predisposes individuals to type I and type II diabetes.

Br. J. Nutr. 1998;79(4):315-327

Future Cardiol. 2009;5(1):15-23

J. Am. Coll. Cardiol. 2008;52(24):1949-1956

Vitamin D and calcium replacement therapy in South Asian patients with DM II causes a significant decrease in both HbA1c and weight, which may be attributed to the increase in vitamin D levels post-tx.

Int. Jnl. of Clinical Practice 2010;64(8):1084-1089

Diabetes II

The presence of vitamin D in the body can improve the compromised endothelial dysfunction found in DM II.

Future Cardiol. 2009;5(1):15-23

Endothelial dysfunction = compromised ability of the endothelial lining of the blood vessels to produce vasodilators is reduced.

in multiple ways, adequate vit D improves the efficiency of the immune system and fights cancer which is of considerable importance of the diabetic individual, DM compromises the immune system and increases the risk for certain cancers.

Higher Vitamin D status is associated with decreased risk of DM II.
Am. J. Clin. Nutr. 2010;91:1627-1633
subsample of 1972 Framingham Offspring Study participants.

Adjustments were made for:

- 1) age
- 2) sex
- 3) waist circumference
- 4) parental hx of DM II
- 5) HTN
- 6) low HDL
- 7) elevated triglycerides
- 8) impaired fasting glucose
- 9) Dietary Guidelines for Americans Adherence Index score.

Maintaining optimal 25(OH)D status may be a strategy to prevent the development of DM II.

Diabetes II

“Dr. Kellogg, God has given you favor with the medical fraternity, and he would have you hold that favor.

But in no case are you to stand as do the physicians of the world to exalt allopathy above every other practice, and call all other methods quackery and error; for from the beginning to the present time the results of allopathy have made a most objectionable showing.” 3MR 305.1

Diabetes II

23 Sept, 2010: FDA will significantly restrict the use of rosiglitazone, in response to data suggesting an elevated risk of cardiovascular events.

26 Sept, 2010: EMEA (European Medicines Agency) recommended the suspension of marketing authorizations for rosiglitazone-containing medications in Europe.

Diabetes - Case Study A

70 y/o Caucasian male. (5'8" 173lb)

CC: severe inflammation R knee.

DDx: gout vs cellulitis?

Initial findings showed HgA1c of 8.5

Hx of gout
uncontrolled NIDDM
neuropathy in both extremities

HX OF PRESENT ILLNESS:
several months occasional pain R knee
Sunday - working in yard several hours
Monday am - knee red and hot
Tuesday - could barely climb on examination table. excruciating pain

TREATMENTS:
charcoal and h/c tx's were done... BUT needed MRI!!!!

Diabetes - Case Study A

MRI of R knee 10/09

80% tear of quadriceps tendon; 20% fibers intact.

Orthopedic Surgery to repair.

Removed extensive uric acid crystals from affected knee.

Diabetes - Case Study A

Follow up: 01/05/10

HgA1c 5.2 (barely 3 months after 8.5)

Lost 14 lb.

Walking without walker, looking great.

Diabetes - Case Study B

61 y/o Caucasian male (5'9" 203.3 lb)

CC: NIDDM, hypercholesterolemia, sleep apnea.

Neuropathy both LE's and R hand by PE

Borderline DM for 20 years (since early 1980's)
NIDDM for past 5-6 years.
Fasting BS 120-180. HgA1c ?.
In 2003, triglycerides ~950, cholesterol ~300.
Patient VERY motivated to use exercise and diet to control diabetes.

Lots of 'junk food'.
Chicken, beef, fish, bacon.
Some milk, cheese, butter.
Feels run-down and occasionally depressed.
Neuropathy both LE's and some in R hand -confirmed by physical exam.

Initial Labs - 02/24/09

TGL	340 (<150)
Total cholesterol	253 (125-200)
HDL	39 (≥ 40)
LDL	146 (≤ 130)
Chol/ HDLC	6.5 (≤ 5.0)
Fasting glucose	181
Total bilirubin	2.0 (0.2-1.2)
HgA1c	8.4
24-hr urine	wnl
C-peptide	3.5 (0.8-3.1)

F/u after departure

	02/24	03/02	05/30	08/26
Triglycerides	340	148	126	104
Total Cholesterol	253	180	161	181
LDL	146	116	103	124
Chol. Risk ratio	6.5	5.3	5.0	5.0
Fasting BS	181	157	108	100
HgA1c	8.4	-	5.5	5.2

Weight 02/24/09 - 203lb
Weight 07/20/09 - 175lb

Resource List

The Complete German Commission E Monographs -
Therapeutic Guide to Herbal Medicines. ISBN:
0-9655555-0-X

Encyclopedia of Medicinal Plants, vol I and II by
George D. Pamplona-Roger, M.D. ISBN:
84-7208-157-5

Resource List

- PDR for Nonprescription Drugs, Dietary Supplements, and Herbs (2011)
- PDR for Herbal Medicines
- PDR for Nutritional Supplements
- Herb, Nutrient, and Drug Interactions - Clinical Implications and Therapeutic Strategies (Mosby Elsevier) ISBN: 978-0-323-02964-3

Resource List

- CharcoalRemedies.com by John Dinsley.
ISBN: 0973846402
- *The China Study* by T. Colin Campbell, PhD
and Thomas M. Campbell II ISBN:
9781932100662
- *Defeating Diabetes* by Brenda Davis, R.D &
Tom Barnard, M.D. ISBN: 1570671397

Resource List

- The 30-day Diabetes Miracle ISBN: 9780399533860
- The 30-day Diabetes Miracle Cookbook ISBN: 9780399534218
- Foods that Heal by George D. Pamplona-Roger, M.D. ISBN: 0-8280-1864-2

Resource List

- Forgive to Live by Dick Tibbits, M.D. ISBN: 978-1591454700
- Heartbeat by James L. Marcum, M.D. ISBN: 159684177X
- Manual of Hydrotherapy and Massage by Fred B. Moor, M.D. et al. ISBN: 0816300232

Resource List

- **Proof Positive by Neil Nedley, M.D. ISBN: 0966197933**
- **Depression: The Way Out by Neil Nedley, M.D. ISBN 0-9661979-4-1**
- **Spiritualistic Deceptions in Health and Healing by Edwin A. Noyes, M.D., M.P.H. ISBN: 9780938805193**

Resource List

- The StepFast Lifestyle Series - 12 part DVD series. (Great resource to show in waiting room...)

Resource List

- Rational Hydrotherapy by John Harvey Kellogg, M.D. (free download from Google Books) ISBN: 978-1572582095
- Hydrotherapy: Simple Treatments for Common Ailments by Clarence Dail, M.D. and Charles Thomas, Ph.D. ISBN: 978-0945383086

Resource List

- Hydrotherapy Theory & Technique by Patrick Barron (contains some New Age ideas) ISBN: 978-0971192669
- Elements of Hydrotherapy for Nurses by George K. Abbott, M.D. ISBN: 978-1572585218
- Principles and Practice of Hydrotherapy, for Students and Practitioners of Medicine by George K. Abbott, M.D.

Resource List

- Rx: Charcoal by Agatha Thrash, M.D. & Calvin Thrash, M.D. ISBN: 978-0942658095
- Home Remedies: Hydrotherapy, Massage, Charcoal and other simple treatments. by Agatha Thrash, M.D. & Calvin Thrash, M.D. ISBN: 978-0942658026
- Diabetes & the Hypoglycemic Syndrome (1999) by Agatha Thrash, M.D. & Calvin Thrash, M.D. ISBN: 978-0942658118

Resource List

- Scientific Validation of Herbal Medicine by Daniel B. Mowrey, Ph.D. ISBN: 978-0879835347
- Next Generation Herbal Medicine (Guaranteed Potency Herbs) by Daniel B. Mowrey, Ph.D. ISBN: 978-0879835323

Resource List

- Phytochemical and Ethnobotanical Databases. James Duke, Ph. D. www.ars-grin.gov/duke/
- Handbook of Medicinal Herbs by James Duke, Ph.D. ISBN: 978-0849312847
- The Green Pharmacy Guide to Healing Foods: proven natural remedies to treat and prevent more than 80 common health concerns. by James Duke, Ph.D. ISBN: 978-1594867132

Resource List

- The Green Pharmacy Herbal Handbook: your comprehensive reference to the best herbs for healing, by James Duke, Ph.D.
ISBN: 978-1579541842

Resource List

- Medical Herbalism: the science principles and practices of herbal medicine. by David Hoffman, FNIMH, AHG. ISBN: 978-0892817498
- The Herbalist (multimedia CD-ROM) by David Hoffman, FNIMH. (contains “Herbal Materia Medica” searchable resource. Use on Mac, will only run on WinXP 32 bit and earlier systems..) ISBN: 978-1886649002

Resource List

- Nutrition & Wellness: a Vegetarian Way to Better Health. by Winston Craig, Ph.D.
- The Use and Safety of Common Herbs & Herbal Teas. by Winston Craig, Ph.D.
- order these 2 books and others from:
wcraig@andrews.edu

Resource List

- “Interactions Between Herbal Medicines and Prescribed Drugs: an updated systematic review.” *Drugs* 2009;69(13):1777-1798
- “Herbal Interactions on Absorption of Drugs: mechanisms of action and clinical risk assessment.” *Pharmacological Research* 2010;62(3):207
- *Drugs & Therapy Perspectives* 2010;26(4):23

Resource List

- “Effect of milk thistle and black cohosh supplementation on digoxin pharmacokinetics in humans” *Drug Metab Dispos.* 2007;35(2):240-245
- “Clinical Assessment of CYP2D6-mediated herb-drug interactions in humans: Effects of milk thistle, black cohosh, goldenseal, kava kava, St. John’s Wort and Echinacea.” *Mol. Nutr. Food Res.* 2008;52(7): 755-763

Resource List

- “Potential Interactions between alternative therapies and warfarin.” *American J. Health-System Pharmacy* 2000;57(13):1221-1227
- “Comparison of St. John’s wort and imipramine for treating depression: randomized controlled trial” *BMJ* 2000;321:536-9

Resource List

- “The Risk-Benefit Profile of Commonly Used Herbal Therapies: Ginkgo, St. John’s wort, Ginseng, Echinacea, Saw palmetto, and Kava.” *Ann. Intern. Med.* 2002;136:42-53

Recipes

Russian Penicillin:

- 2-3 cloves peeled garlic
- 1 barely peeled whole lemon
- 2C hot water
- add pinch of salt

Blend the above till smooth as possible. Add 2 more cups water. Drink 1-2 qts daily between meals.

Use for: all types of infections (boils, ear, GI)

Note: some person may not tolerate the raw garlic. Should they experience burning or gastric discomfort, use lightly steamed garlic instead.

Note: never apply raw garlic directly to skin or mucous membranes, it may cause severe burns.

Recipes

Cough syrup A:

- 1/4C honey
- 1/4C lemon juice
- 20 drops eucalyptus oil
- Optional: add 3-4 cloves garlic, 1 medium red onion.

Blend. Sip small amounts prn.

Recipes

Cough syrup B:

Boil 1 C honey

Blend and add the following:

Juice from 2 lemons

1/2 t eucalyptus oil

1/4 t peppermint oil

1 clove diced garlic

1/2 onion finely diced.

Keep in glass container in refrigerator.

Sip prn.

Recipes

Flax Tea:

- 1 Tbsp whole flax
- 1 C boiling distilled water
- Steep 20 minutes
- Strain seeds out

For eyedrops: add 1/2 t salt. Place in sterilized eyedropper bottle. Use 2-3 drops every 3 hours.

Use for:

Eyes: redness, dryness, soothing,

GI: protective, soothing.

Recipes

Fungal Toenail:

- 1 pint vinegar
- 1/2 oz calendula
- 1/2 oz myrrh
- 1/2 oz chamomile

Mix and let stand for one week. Apply. If there is a burning sensation, add water.

Use this mixture faithfully for up to one year.

Recipes

Slippery Elm Tea:

- 2 Tbsp Slippery Elm Powder
- 1 pint hot water.
- Blend till smooth.
- Add 1 more pint hot water.

Mix well. Drink instead of water.

Use for:
respiratory and GI problems. soothing, healing.
eg. bronchitis, pneumonia, IBS, IBD, ulcers, gastritis, esophagitis etc.

Recipes

Gargle A:

- Add 1 tsp salt to 1 C hot water
- Add 1 tsp charcoal powder to 1 C cold water. (Mix well, don't aspirate...)

Start gargling with the hot salt water. Spit out. Follow with cold charcoal water, may swallow.

Continue until both cups used up. Finish with cold.

May repeat every 2-3 hours.

Recipes

Other gargle alternatives:

- Tea tree oil. 5 drops to 8oz water.
- Grapefruit Seed Extract. 5-10 drops to 8oz water.
- Salt. 1 tsp salt per 8oz water.

Note: Never use undiluted Grapefruit seed extract. Never place it undiluted on any part of the body – will cause severe burns.

Recipes

High Iron Drink:

1 C dates

1 C figs

1 C raisins

1 C apricots

1 C molasses

Chop all of the above finely. Pour 1 qt grape juice over the mixture. Allow it to soak in the refrigerator.

Not for diabetics !

Recipes

“Quick-and-Easy” Rehydration Drink

- 1 qt (or liter) water
- 1 tsp salt (provides Na^+)
- 1 tsp baking soda (aluminum free for a buffer)
- Juice from 1 or 2 lemons, oranges, grapefruit or add a mashed banana (for K^+)
- 2T honey (for glucose)

Recommendation –

For a child:
Provide 1oz (2Tbsp) every 15 minutes (wake them if you have to). Do not give them more, even if they are begging for more, until they have kept it down for 2-3 hours.

For adult:
Start with 2-3 Tbsp every 15 minutes.
If it's staying down, may progress to 1/4 to 1/2C every 15 minutes.
If making good progress, may increase to 1C every 15 minutes.