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Natural Remedies for Seasonal Allergies

Flu!

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Good news about treatment of Flu

Flu is the seventh cause of death in America. Regular flu kills about 36,000 Americans every year. But occasionally, as in 1918, it becomes a plague. Then, we, our families, or friends may very well be attacked by a killing flu virus. Flu is worth understanding, so we can prepare to prevent and fight it.

Flu involves pigs

Ever since Deuteronomy 14 we have known that pigs are unclean and intrinsically dirty. But when you put 1,000,000 pigs in a big Mexican factory, feed them carelessly, deprive them of good air and environment, and then drug them until they can be trucked off so that humans can be "scavengers of the scavengers"—no wonder biology rebels! New and strange viral mutations happen. This new breed of bug called swine flu is 2 parts pig, 1 part bird, and enough human to be catching, allowing the 2009 A-strain of H1-N1 swine flu to spread throughout the world. Even though this strain may not swell to epidemic proportions, it can be a timely and critical wakeup call if we will heed it.

There is direct chemical evidence that when the 1918 strain of flu is given back to pigs the virus multiplies avidly but does not kill them. But when given to monkeys, they die. So do ferrets and mice. No wonder pigs are called "mixing vessels." Birds can transport virus for thousands of miles but they don't live long enough to do as much damage as pigs. In pigs a reassortment of genes from humans, birds, and swine can happen and the resulting genes have not just gradually drifted—they have shifted into a new, fast, and sometimes deadly form. Case in point? More people were killed with the 1918 virus than by all of World War I carnage combined.

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Why?

The Great Physician has a big answer. He said, regarding the future, "...ye shall hear of wars and rumors of wars... and there shall be famines, and *pestilences*.[1] So, the prophetic scenario is: wars ➤famines ➤pestilences. Big wars fracture supply lines, spread famine and malnutrition, and massively stress thousands of people, setting them up for stronger virus and germs to kill them. Thus the 1918 super flu resulted. It killed 650,000 Americans—18 times more than a regular seasonal flu usually does.

What is flu virus like?

The flu virus is a tiny, brilliantly designed, biologic time bomb. It is about 100 nanometers in size. That is one two-hundred and fifty-*thousandth* of an inch! In fact, the virus is so small that it can pass right through unglazed porcelain, as discovered by Dr. Shope in 1930. This virus has hundreds of micro-clubs (called hemagglutinins) on it. These projections can stick to human airways. Also hundreds of spikes (neuraminadase) stick out between the clubs and join the molecular fight to break into and kill lining cells of the lungs. If the defenses are weak, the virus is soon inside and in short order having babies and grandbabies! When these offspring break loose or are spilled into the breathing tubes, the virus spreads fast and widely. Flu symptoms vary from sniffles to painful gasping for air. The very young, the elderly, pregnant mothers, diabetics, and others who have compromised hearts, lungs, or immune systems are the most vulnerable to pneumonia and death.

How does the flu virus dodge from year to year?

The clubs and spikes change often, so that last year's antibodies or vaccines may not protect from this year's newer flu virus. This makes it difficult to predict what strain will hit our communities next season, so the value of vaccines is somewhat compromised.

What about types?

As explained, the clubs are hemagglutinins and the spikes, neuroaminidase. There are about 15 different kinds of molecular clubs and about 9 types of spikes, so the capacity for variation by mutation is daunting! The abbreviations for these two terms, H and N, are used to denote the names for the individual stains. The 2009 swine flu is H1N1.

Oops! As of spring 2009, no vaccine is effective against the new strain. It usually takes up to six to eight months to make a new vaccine.

We have heard a good bit of serious news. Now for some good news about flu.

How the body fights flu

The body fights flu by a natural antibiotic called lysozyme, discovered by Sir Alexander Fleming in 1922. When one is in excellent health, lysozyme and fellow immune defense factors can kill flu viruses, cold viruses, and even polio viruses. We have

evidence that under optimum conditions there is measurable synergism in the bioactive agents that fight germs.

The pH factor

But, for lysozyme to function properly, the surface acidity or pH must be right! It needs to be 6.8 or lower to zap the virus. In the following three conditions lysozyme can't do the job:

- stress
- shortage of sleep
- fatigue

No wonder colds and flu are so common.

Hydro to the rescue

The moist heat of hydrotherapy can correct this imbalance. Dr. Charles Thomas, a Stanford graduate, taught hydrotherapy to each medical student at Loma Linda University for years. He had a standing arrangement with his students: "When you feel the first symptoms of flu, come immediately to my Physical Therapy Laboratory and I will give a hydrotherapy treatment. Then I will put you to bed." In the morning the medical students were usually well or much better!

While a student of Dr. Wayne McFarland, at Potomac University, I learned that, when in his residency in Physical Medicine at Mayo's Clinic, he put a pH probe inside of the lung of a man. His measurements showed for the first time that when you put a hot fomentation *outside* of the lung the pH *inside* goes down where it belongs. When the pH is optimum, lysozyme and other natural immune factors can synergize to attack the virus and other unhealthy conditions in the lungs. So hydrotherapy for flu has scientific basis for frontline use.

How do hydrotherapy and lifestyle medicine work?

W. A. Ruble, a physician and leader in a Seventh-day Adventist medical school then called the College of Medical Evangelists at Loma Linda, California, wrote a short article entitled, "Sanitarium Treatment of Influenza," in *Life & Health,* May 1919.[2] Dr. Ruble provides us with data on 1,123 patients treated in 10 Seventh-day Adventist Sanitariums, now referred to as lifestyle centers. He then compares the results with U.S. Army data on flu treatment for pneumonia and death. See the following page for a graphic presentation of the results, as prepared at Wildwood Lifestyle Center & Hospital.

Pneumonia: Notice that the patients who were treated as outpatients had about one-half as much pneumonia as those in the U.S. Army *(see figure 1).* But those given faithful 24/7 sanitarium care with hydrotherapy, vegetarian diet, regular sleep, and excellent nursing care fared more than 5 times better.

The hydrotherapy included such treatments as fomentations applied to the lungs every few hours, and even at night if necessary. Hot footbaths usually accompanied the fomentations. The temperature of these foot baths were wisely tuned to the state of the blood vessels and nerves of the patient. For example, in diabetes, no hot water. Meanwhile all chilling of the patient was avoided. Russian steam baths were also used.

Pneumonia is a most serious complication of the flu because millions of cells lining the lungs are attacked and killed and the resulting inflammation, congestion, and secondary invasion of bacteria can overmaster the body and kill the patient. Remember that germs are becoming resistant faster than newer antibiotics are becoming available. Part of this debacle is due to unwise and unwarranted use of antibiotics in animal factories, (such as that of pig, chicken, and cow) to keep these unfortunate creatures alive in their unbiologic toxic environments.

One conclusion is obvious: lifestyle medicine can help prevent pneumonia.

Deaths: Lifestyle Medicine and hydrotherapy resulted in about five times fewer deaths than did U.S. Army care *(see figure 2).* The actual comparison was even better because of the differing age of the groups involved. The army patients were a younger group, whereas the sanitarium patients included the elderly. Of the patients who did get pneumonia, only 1.3 percent of those who were inpatients in a sanitarium died. This is three times better than the results of those outpatients who came to the san for treatment when they felt worse and stayed home when they felt better! (As if feelings were scientific.)

Ruble's comparisons do not represent observational tokenism. More than 1,000 patients were involved. Here before our needy eyes is evidence that natural methods can fight flu very well. We must take this current, milder swine flu as a wake-up call. We must get ready for a big one. All rational methods and means must be followed to get in shape and stay that way.

Similar therapies have been used in the past. Native American Indians used steam treatments produced by hot rocks and water pours followed by applications of brisk, brief cold. Scandinavian saunas and other diverse approaches worldwide have also helped nature fight disease. Even Hippocrates used natural means to facilitate healing.

Why was inpatient sanitarium therapy superior?

- More hydrotherapy. Oftener. Better therapeutic context, leading to better results.
- Better diet. Steady vegetarian diet reduces inflammation.
- Better sleep and rest. Real flu is a serious sickness.
- Less stress. Flu patients need quiet, undisturbed surroundings.
- Less chilling. Cars, traveling, waiting rooms, hallways, and drafts predispose one to chilling. And chilling promotes pneumonia.
- Better overall environment.
- Closer medical monitoring and a full spectrum of lifestyle medicine combined with steady skillful nursing care add up to more lives saved and fewer lost.

What hydro should be given?

One of the best treatments for flu is fomentation therapy. A step-by-step description of how to do it is included on pages 33 to 36 of this issue. The treatment can be repeated every five to six hours, and once during the night if the patient is seriously ill. If your patient is improving, keep up the program until he is fully recovered. If his condition is worsening, get help soon. Serious flu can lead to additional problems, including pleurisy or complications of heart or brain. Hospitalized care may be necessary. Don't forget to pray to the Great Physician who loves to help us heal in His way.

Hydrotherapy for children

Babies can be given hot and cold contrast showers while held in their mother's arms. As she showers with her little one, she should focus the spray on his back and lungs. Babies can also be given contrast baths in tubs of hot and cold water. Modify the water temperatures to suit the child's tolerance. Make the treatment as pleasant as possible.

Older children can also be given hot and cold showers or baths, as well

as gentle fomentation therapy. Three exchanges of hot and cold, then off to bed.

Epilogue

Utilizing hydrotherapy and lifestyle medicine in the treatment of flu:

- prevents most pneumonia
- prevents most deaths.

We must stay informed, avoid the flu virus, wash our hands, and not rub our eyes, pick our noses, or lick our fingers. We should keep up our daily exercise, especially during the early morning hours. Remember moderate sunshine. Get and stay on a decent diet. Go to bed at night early and regularly. Two hours of sleep before twelve a.m. are worth four after midnight. And last but assuredly not least, trust in Divine Power. This is not a pious luxury—it is a modern necessity since stress is becoming cosmic!

If you do get sick, practice the Golden Rule and stay home until completely recovered.

Hydrotherapy is a winner. Get a deep plastic bucket for a foot bath and keep a full set of dry fomentations in it. Be ready. The skilful use of oral and external charcoal can also reduce inflammation and thereby lessen the dire effects of the "cytokine storm."

The Four Angels of Revelation are loosening their restraining grip on the forces of evil. Soon pestilences will sweep the world more and more frequently and seriously. Because the cities are at greater risk for epidemics as well as many other undesirable conditions, country living is advantageous. And if you get a chance, eliminate pig, chicken, and other dangerous animal factories. Even keeping a good upwind distance from them can be helpful to your health and wellbeing.

A big promise

God says, "If, thou wilt diligently hearken to the voice of the Lord thy God, and wilt do that which is right in His sight, and wilt give ear to His commandments, and keep all his statutes, I will put none of these diseases upon thee...."[3] A great promise with big, broad conditions. We must cooperate totally. Then the results will be excellent!

Soon we all will enjoy the peaceful glories of a world without any flu, virus, disease or trouble. Praise God! ■

REFERENCES
1. The Bible, Matthew 24:6,7.
2. pp. 114, 115.
3. The Bible, Exodus 15:26.

Carbohydrate recipes, cont. from page 18.

lemon juice and whiz just long enough to blend it in. Store in glass jar in refrigerator. Keeps for one to two weeks. This simple topping can dress up your vegetables, baked beans, or salads.

For salad dressing, add herbs of your choice, such as parsley, cilantro, dill, or oregano. Substitute nuts or seeds for a portion of the soy powder, or olives for the olive oil. Experiment with adding cucumbers, tomatoes, beets, or other options, as desired. Thin if desired.

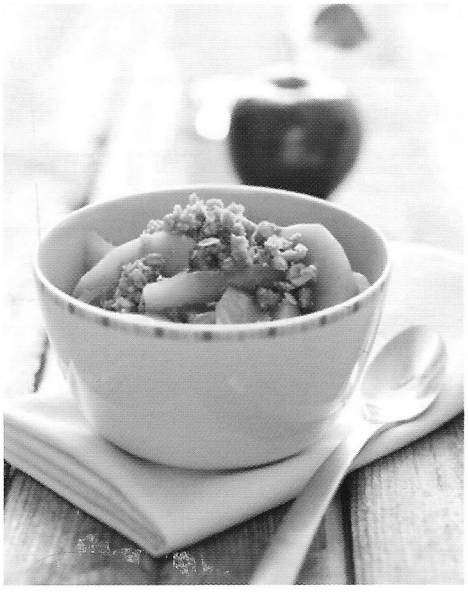
Soy Corn Muffins

2 c soaked soybeans (or garbanzos)
2 c water
2 tbsp sweetener
2 c whole-grain cornmeal
2 tsp salt
¼ c quick or rolled oats

Blend smooth all but cornmeal. Stir in cornmeal. Fill oiled muffin tins and bake at 375° for 45 minutes or in an 8 by 8-inch pan for 50 minutes.

Quick Crisp

2 c quick oats *or* 1⅔ c plus ⅓ c whole wheat or barley flour
½ tsp salt
⅓-½ c chopped nuts
2 tbsp oil
½ c pineapple or other fruit juice
optional flavorings, such as coriander, grated peel of a clean orange or lemon, or vanilla, almond, or maple extracts
fruit: fresh, canned, dried, or frozen. Firmer fresh fruits, such as apples or pears, should be slightly pre-cooked. Rehydrate dried fruit before baking.



Mix dry ingredients well, then add liquids and mix all together. Texture should be crumby, like granola.

Put a generous layer of fruit, such as cherries, berries, or sliced apples, pears, peaches, or plums in baking dish and sprinkle very lightly with a dusting of salt. Cover with topping. Bake covered at 350° for about 45 minutes or until fruit is tender. Uncover for the last 15 minutes, allowing topping to lightly golden. ■

Fomentations, continued from page 36.

the foot, rub briskly with a to-and-fro movement up over the knee and thigh and back down to the foot. Repeat twice. Remove mitts, quickly pat the skin dry, to prevent chilling, then recover leg. Repeat procedure on other leg. Next do the arms. Beginning at fingers, rub up to the shoulder then back to the hand. Then apply mitt friction to the chest and abdomen. Lastly, turn patient over on his side or stomach, remove the fomie lying on the bed, and apply cold-mitt friction to his back. Dry the skin, and allow him to lie on his back again. Give him warm, clean bedclothes and socks to put on, if he desires. Cover patient with bedding and allow him to rest for at least 30 minutes. He should be comfortable, relaxed, and free from sweating or chilling.

15. Allow approximately four hours between treatments.

General precautions and counsel

- Avoid chilling the patient. When procedures require uncovering him, work as quickly as appropriate. Do not leave bare skin exposed any longer than necessary.
- Avoid burns to sensitive areas by wiping moisture off skin frequently and padding with a small towel or wash cloth if necessary.
- Be careful not to spread infection or germs; clean equipment and treatment area thoroughly.

In the case of influenza, fomentation therapy is more effective when administered as soon as possible after symptoms are recognized. Continue the treatments twice or more daily until fever is gone.

Practice in giving this treatment before a critical need arises will increase confidence and skill. Properly given, hydrotherapy facilitates the body's mechanisms of healing and provides results that are more than worth the effort! ■

Elizabeth J. Hall

Flu Prevention

What the Broadcasters Don't Say

Health leaders around the world have become very concerned about a new strain of influenza from Mexico, H1N1, because it has crossed into other countries, including the U.S. Unfortunately, no new vaccine has yet been developed for this strain and the younger generations do not have natural immunity to it. Health officials are worried about the possibility of it mutating into a more virulent form and coming back this autumn, as it did in the influenza pandemic of 1918 that killed up to 50 million people. Indeed, health epidemiologists are warning that we are overdue for a pandemic of severe influenza.

Network health editors are admonishing people to wash their hands often, disinfect surfaces frequently, isolate sick individuals, avoid crowds if immunocompromised, and not to panic. As important as these safeguards are, it seems that the media is missing some important preventive steps. Is there something more that we can do to protect ourselves from getting this flu strain or any other one? Fortunately, there is, and the answer is largely wrapped up in one basic preventive approach—steady, healthful lifestyle practices.

The body has not been left without defenses against disease. Two particular components of the immune system, killer-T lymphocytes and natural killer cells, are especially valuable in the fight against influenza. If well-primed, they will, like air-force bombers, search out and destroy viruses and cancer cells. Let's look at some effective lifestyle measures that will boost the efficiency of these two frontline-players of the immune system.

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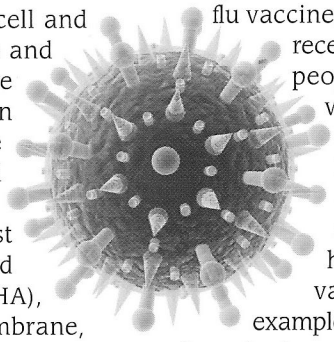
Influenza microbiology in a nutshell

A virus contains either DNA or RNA, its genetic blueprint, and is surrounded by a protein coat called an envelope. Like all viruses, influenza viruses cause illness by entering host cells and replicating within them. The new viruses often kill and then burst from the host cell and go on to infect other cells and people. Influenza viruses are sphere-shaped and contain RNA. The outer envelope is studded with spike- and club-shaped proteins that help the virus invade host cells. The clubs, composed of hemagglutinin protein (HA), fuse with the host cell membrane, thus enabling the virus particle to enter the cell. The spikes, made of neuraminidase (NA), help the replicated virus particles to break out of the host cell membrane.[1] What a highjacking feat! The immune system is responsible for destroying viruses before they destroy us.



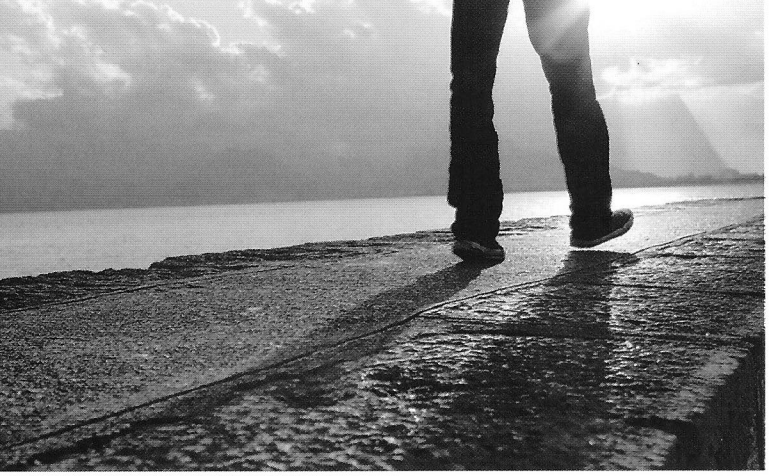
Unfortunately, the configuration of spikes and clubs on flu viruses change from season to season as the virus mutates. For example, in 1997, a new strain of influenza A in Hong Kong jumped from the poultry population to the human population. H5N1, as the strain was named, was originally contracted through contact with chickens.[2] It is a general law of microbiology that as more animals or people succumb to a virus, the stronger it becomes.

Flu Vaccines

No doubt flu vaccines and anti-viral medication have saved many lives, but because the influenza virus can mutate so quickly and form new strains, these measures are not always effective. Influenza vaccinations are generally touted as being approximately 50 to 80 percent effective, depending upon the strain of the virus. In a recent edition of the leading British medical journal, *The Lancet*, researchers recorded that flu vaccines are less effective than originally thought because former studies did not take into account the socio-economic status of the participants.[3,4] In some of the large studies regarding the efficacy of the flu vaccine, the well-to-do population received the vaccine, while poor people, who did not receive it, were used as controls. This study design could very well have affected the accuracy of the studies, because additional variables may have also played a part in the vaccines' effectiveness. For example, the poorer classes may not have had access to some of the benefits supporting health that the wealthier may have, such as ample fresh produce, helpful and warm living conditions, and opportunities for health care.

Italian epidemiologist, Dr. Demicheli, refutes claims of flu vaccines being 70 to 90 percent effective, stating this is "both wrong and misleading... and refers only to the ability of the vaccine to produce antibodies effective against the virus. But this is not the important measure of vaccine efficacy. Instead, we should measure the ability of the vaccine to prevent actual clinical disease, in this case, influenza. By this measure, he claims that vaccine efficacy is no greater than 25 percent."[5] Of course, some flu strains are more susceptible to vaccines than others.

Another point to consider is that from the mid 1990s to 2004, worldwide resistance to drugs used to treat influenza has increased by approximately 12 percent.[6] As we shall see, lifestyle factors often impact the success of vaccines for influenza. Moreover, as helpful as they may be, vaccines do not



provide full immunity and cannot be substituted for a healthful lifestyle.

Because the flu vaccine itself evokes a short-term pro-inflammatory response, it would be judicious for individuals getting it to adopt an anti-inflammatory program. This would include a largely plant-based diet, including severe restriction of sugar, sweets, or refined carbohydrates and fats, an ounce of nuts per day, adequate sleep, moderate daily exercise, and exposure to sunlight—all of which also bolster the immune system.[7]

Lifestyle shapes immunity

Dr. Morimoto and associates at the Osaka University Graduate School of Medicine investigated the association between lifestyle and mental health status and natural killer (NK) cells. The lifestyle habits they examined included cigarette smoking, alcohol consumption, sleeping hours, working hours, physical exercise, eating breakfast, balanced nutrition, and mental stress. Here is what they discovered: participants with a good overall lifestyle showed significantly higher NK cell activity than those with poor lifestyle habits. Subjects who complained of an unstable mental status had significantly lower NK cell activity than those who reported having a stable mental status. Consequently, when the participants were divided into four groups by lifestyle and mental health status, it was found that subjects who had poor or moderate lifestyle and reported unstable mental status, showed the lowest NK cell activity, while those who had good lifestyle practices and reported stable mental status showed the highest NK cell activity.[8] In a later study, Drs. Li and Morimoto found that healthy lifestyles are also associated with significantly higher numbers of natural killer cells as well as higher levels of virus-killing enzymes in these cells.[9]

Vitamin D combats influenza

Your body produces natural antibiotic-like compounds called antimicrobial peptides in the white blood cells. Bioactive vitamin D dramatically increases the activity of these germ-fighting compounds and epithelial cells of the respiratory tract.[10] On the other hand, vitamin D deficiency also predisposes children to respiratory infections. Ultraviolet radiation (either from sunlight or artificial sources) promotes vitamin D synthesis on the skin and reduces the incidence of viral respiratory infections. Nutritional epidemiologists estimate that as many as 50 percent of North Americans and Europeans have either an insufficiency or frank deficiency of vitamin D, both of which contribute to health problems. To solve this problem, get at least 15 to 20 minutes of sunlight a day without sunscreen (when the burn index is not too high) and consider taking a vitamin D supplement, especially if you are indoors most of the day, are elderly, have dark skin, or live at a latitude greater than 40. Having your vitamin D level checked annually if you are at risk for developing an insufficiency is wise.

Exercise: another immune booster

Researchers in Hong Kong discovered that individuals who never or seldom exercise increased their risk of dying from influenza from between five and a half to eight times. In contrast, those who exercised frequently decreased their risk by four to nearly six and a half times.[11] Furthermore, in a study done by scientists at Iowa State University, it was found that the subjects who exercised vigorously following a flu vaccine, had a higher concentration of both IgG and IgM.[12] Serum IgG is a class of antibodies that is found in all fluids in the body and is very important in fighting bacterial and viral infections, including influenza. Higher IgG levels are considered to be a good predictor of resistance to infection. IgM antibodies are found in blood and lymph fluid and are the first type of antibody made in response to an infection. They also cause other immune cells to destroy foreign substances.

Obviously, exercise is good, but are all types equal?

Harmful levels of activity: Researchers at the University of South Carolina found that exercise stress in mice was associated with an increase in susceptibility to influenza infection in the form of morbidity, mortality and symptom severity.[13] In humans it was found that very heavy exertion increased the risk of upper respiratory tract infections, due to negative changes in immune function and elevation of the stress hormones, epinephrine, norepinephrine, and cortisol.[14,15] This effect is significant because it would also lower a person's resistance to influenza. Another study found that following strenuous exhaustive exercise, the number of natural killer cells and T-lymphocytes is decreased and their activity is depressed for several days.[16]

Moderation is the key: Moderate exercise helps to protect us from influenza, but strenuous, exhaustive exercise increases susceptibility to influenza and other respiratory infections. Moderate exercise also increases antibody production, improves T-lymphocyte function in the elderly, and slows down the aging of the immune system.[17,18] This means that with moderate exercise, even older people can develop an increased resistance to viral infections, reduce the formation of cancer cells, and slow down the aging of the immune system.

How does a person know what level of exercise is considered "moderate," "vigorous," or "strenuous?" This will depend on the individual's health condition and ability. Exertion is scientifically measured in METs. Activity above five METs will encourage undesirable clotting in a healthy person and is considered detrimental to the immune system. Brisk walking is gauged at five METs, jogging at six METs. Because there is room for variance among individuals, a simple rule of thumb might be, if you cannot talk while exercising, the activity is too strenuous for your health.

Temperance

Temperance is defined as the abstinence from all injurious agents and harmful habits, and the moderate use of all good substances and activities. Intemperance weakens the body's ability to fight disease. For example, alcohol suppresses natural killer-cell activity. Just two drinks of an alcoholic beverage decreases antibody production by 66 percent! Smoking also

decreases natural killer-cell activity but stopping the practice will improve it. In addition, smoking drys out the nasal passages and paralyzes cilia, the delicate hairs that line the respiratory tract and help sweep germs out of the body. Merely one cigarette can paralyze cilia for as long as 30 to 40 minutes! Exposure to second-hand smoke can increase susceptibility to upper respiratory and lung infections.

Nutrition

Obesity is another condition that suppresses the immune system. On the other hand, wise calorie-restriction actually slows down aging of the T-lymphocytes. Likewise a high-fat diet slows antibody production and suppresses the immune system in general. But when the total fat intake is decreased merely 5 percent, from 30 percent of the total calories to 25 percent, T- and B-lymphocyte activity increases significantly. Furthermore, research indicates that reduction of fat intake from 32 to 22 percent of the total calories also improves the activity of the natural killer cells.[19,20] Another immune suppressant is sugar, which works in a dose-related fashion and lowers our resistance. A high-salt diet also depresses certain viral-killing compounds in the immune system. Stay away from junk foods if you want to seriously reduce your risk of getting the flu.

Eating foods rich in antioxidants gives the immune system an extra boost. If you are taking a little extra vitamin C, don't forget to increase your intake of vitamin E as well, because adequate amounts of this vitamin also slow down the aging of the immune system. Studies show that vitamin E-induced enhancement of immune functions is associated with significant improvement in resistance to influenza infection in aged mice as well as a reduced risk of acquiring upper respiratory infections in nursing home residents.[21,22] Remember, however, that taking too much of one antioxidant or vitamin with marginal intakes of the others actually creates more free radicals in the body—a condition we don't want.*

The trace element zinc is essential for proper relationships between the nervous, endocrine, and immune systems. Dietary zinc is an important immunoregulatory agent with anti-inflammatory roles and is necessary to balance helper-immune cells. Chronic diseases that are often associated with lowered levels of zinc include bronchial asthma, rheumatoid arthritis, Alzheimer's disease, lupus, type 1 diabetes in children, and Crohn's disease, all of which have an autoimmune component. Food sources of zinc include nuts, legumes, whole grains, and sea foods. Although fish contains zinc, we cannot recommend its consumption due to its potential toxic metal and pesticide content. Vegetarians, however, may need to have their zinc levels checked.

Water—another biologic hero

In flu prevention, the use of water—both internally and externally—should be emphasized. The brain modulates the immune system by sympathetic and parasympathetic nerves (autonomic nervous system) to lymphoid organs. The sympathetic nerve activation predominates in stressful situations. Parasympathetic activity helps us to perform the routine jobs of daily life. Research suggests that adequate hydration improves the balance between these two branches of the autonomic nervous system. Drink at least eight glasses of water, which can include herb tea, every day. Adequate hydration is essential for the immune system.

If you do not have circulatory or other serious medical problems, contrast showers can be quite effective in warding off infections. Start with hot water for 2 to 3 minutes, followed by cold for about 30 seconds, as tolerated. Repeat this cycle three times. This simple treatment will stimulate the circulation of the immune cells throughout your blood.

Get your sleep!

Sleep, in itself, can change one's immune system. Good quality of sleep helps to replenish the cells of the immune system. Researchers from Stanford University discovered that the body's peak disease-battling, immune-system activity occurs during the night; this activity is weakest during the day. Partial sleep deprivation reduces the activity of natural killer cells. Even a modest sleep deprivation for part of the night can reduce the killing ability of the natural killer cells by almost 30 percent.[23] Sleep deprivation also reduces the effectiveness of flu vaccines.

You are what you think

Psychological factors have been shown to influence immune response and alter susceptibility to infection. Early in the 20th century, health educator Ellen White observed, "The relation that exists between the mind and the body is very intimate. When one is affected, the other sympathizes.... Grief, anxiety, discontent, remorse, guilt, distrust, all tend to break down the life forces and to invite decay and death."[30]

Scientific studies continue to confirm these relationships. Researchers at Iowa State University found that greater optimism and a greater number of social interactions were associated with higher levels of influenza-specific IL-10 following the flu vaccine.[24] This is important because IL-10 is a very useful anti-inflammatory agent. The researchers also found that individuals with a greater number of social ties may have decreased susceptibility to infection.

In contrast, a persistent negative outlook erodes both the ability of the NK cells and killer T-lymphocytes to destroy viruses and cancer cells. The emotions and reactive thinking common in depression—helplessness, loneliness, and hopelessness—lack of social support, and unhealthy suppression of these feelings not only depress the mind but also the immune system.

The stress factor

Both chronic and acute stress decrease the percentage of T-helper lymphocytes and the numbers and function of natural killer cells.[31] Stress increases the secretion of corticosteroids. When the level of these hormones become elevated, the ability of the lymphocytes to multiply is decreased. Stress reduces the ability of natural killer cells, as well, to

*Of course, nothing can surpass getting our nutrients and phytochemicals from a variety of whole foods. Nonetheless, wise vitamin and mineral supplementation can prove helpful for those individuals who have certain chronic conditions and is essential for those eating a restricted diet, including one less than 1,500 kcal.

make interferon, a protein that interferes with viral multiplication. The researchers from Iowa State University also found that high stress was a significant predictor of reduced anti-influenza IgG and influenza-specific IL-2.[24] Among its other jobs, IL-2 stimulates antibody production.

Chronic stress has also been found to be related to reduced antibody titer** and IL-2, following influenza vaccination in older adults.

If an individual possesses high anxiety and poor emotional stability, stressors can result in a significant decline in NK cells. But, amazingly, if the individual has high emotional stability and low anxiety, stress actually improves NK cell activity.[32] Realistic optimism, security, confidence, trust, faith, and a will to survive based on self-discipline improve the natural killer cells' job performance.[33]

Fortunately, there is good news for stressed individuals also: problem-solving techniques and coping skills can improve NK cell activity. Cognitive-behavioral therapy (identifying distorted thought patterns and destructive practices and replacing them with healthy ones) and relaxation can also improve the efficiency of the immune system.[34]

The value of connecting

Psychosocial influences not only influence the effectiveness of the flu vaccine, but directly impact the immune system itself. For example, studies show that loneliness appears to have a significant impact on physical health, being linked detrimentally to worse sleep and immune capacity over time in the elderly.[25] In college students, elevated levels of loneliness throughout the semester, as well as small social networks, were found to be independently associated with diminished antibody response to the influenza vaccine. Those with both high levels of loneliness and a small social network demonstrated the lowest antibody response.[26] Individuals who are chronically socially isolated actually show changes in certain genes that cause more proinflammatory activity to predominate.[27] On the positive side, good social relationships can serve as a buffer during both acute and chronic stressors, protecting against immune suppression.

The depression factor

Depression increases the production of proinflammatory molecules that adversely impact the body and consequently contribute to prolonged infections, delayed wound healing, chronic disease, frailty, and morbidity. Addtionally, depression decreases the ablity of T-lymphocyes to respond to viruses in an appropriate and efficient manner.[28]

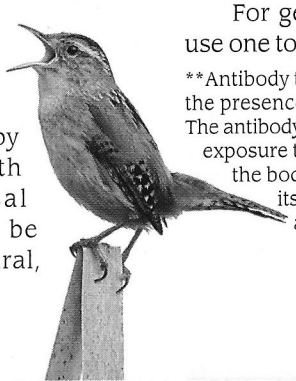
Mental depression also often reduces the effectiveness of flu vaccines. Scientists at the Institute for Behavioral Medicine Research in Ohio found that in older individuals, "even a modest number of depressive symptoms may sensitize the inflammatory response system and produce amplified and prolonged inflammatory responses after infection and other immunological challenges, such as those from a vaccine. Additionally, these sustained or amplified inflammatory responses could possibly accelerate a range of age-related diseases." In other words, our mental state helps to determine whether the flu vaccine will benefit us or aggravate unhealthy inflammatory disorders found in many chronic conditions such as cardiovascular disease, osteoporosis, arthritis, type 2 diabetes, certain cancers, periodontal disease, frailty, and functional decline.[29]

Two neglected remedies

Be sure to get a steady supply of fresh air, day and night, year round. The best way to do this is to spend as much time as possible outdoors. During winter, when people tend to spend more time indoors, keeping windows slightly open can often decrease the risk of sickness. Because dry, heated air can make the respiratory tract more prone to acquiring infections, adding humidity to the air can also be helpful. Even during warmer weather, when individuals spend much time in air-conditioned buildings, it is important to get good ventilation. Keeping air ducts and filters clean summer and winter also promotes better health.

Not only fresh air, but deep breathing is needed. It improves the circulation of the blood and consequently of the white blood cells that circulate in the blood.

And, sing or hum a song. Not only can it improve one's mood, but humming and singing can actually prove therapeutic! Concentrations of nitric oxide in healthy sinuses are high and nasal nitric oxide is known to be increased 15- to 20-fold by humming, compared with quietly exhaling. Nasal nitric oxide is known to be broadly antifungal, antiviral, and antibacterial.[36] Ask God's creatures. Starlings, who are robust singers, exhibit enhanced immunity as compared to non-robust singers. Studies show that singing also increases secretory IgA.[37] IgA is a class of antibodies that guard the mucus membranes in the body, including the respiratory mucosa. Of course, you might not want to sing around others if you have an upper respiratory tract infection, since it could spread your germs. Incidentally, even listening to chorale music reduces levels of the hormone cortisol, which exerts immunosuppressant effects when produced in excessive amounts.



Visual iStockphoto.com

Nature's medicine cabinet

Nature provides us with an arsenal of useful plants that can help fight infections. When you have been exposed to a virus or your immune system is down, try sipping some immune-bolstering herbal tea such as astragulus or echinacea. Garlic is one of the best herbs to use; it enhances immune functions and possesses antibacterial, antifungal and antivirus properties.[38] Aged garlic improves natural killer cell activity and is also useful for preventing psychologically-induced immune damage.[39] If you have been exposed to the flu virus, try this therapeutic drink: blend together one quart of warm water, one or more peeled garlic cloves, and one lemon or grapefruit, peeled and seeded; drink one cup four times a day.

Black elderberry also activates the healthy immune system and is effective against eight known strains of flu viruses. In addition, it reduces the duration and severity of symptoms if the flu is contracted.[40] According to expert herbalist, James Duke, elderberry can actually help prevent viruses from entering the respiratory tract. Some evidence indicates that astragalus root, which also has antiviral properties, can help restore depressed immune function as well.[41] And several laboratory and animal studies show that echinacea can enhance activity of the immune system, relieve pain, reduce inflammation, and exert antiviral effects.[42]

For general immune enhancement, use one to two grams dried root or herb in

**Antibody titer is a laboratory test that measures the presence and amount of antibodies in blood. The antibody level in the blood is a reflection of past exposure to an antigen or a protein or toxin that the body does not recognize as belonging to itself. The body uses antibodies to attack and remove foreign substances.

Continued on page 29.

Flu prevention, continued from page 26.

a tea or two to three mL of standardized tincture extract. Note, however, that individuals with autoimmune disease should not take elderberry or echinacea. As always, if you are taking any medications, check with your pharmacist or health provider before taking herbs in medicinal amounts to avoid possible adverse herb-drug interactions.

Forging a barrier

Proper nutrition, water, good hygiene, exercise, temperance, exposure to sunlight, rest, fresh air, and a positive, trusting attitude are links in a chain of defense against disease. Although your immune system is only as strong as its weakest link, with divine help and perseverance, you can fortify that chain and enjoy optimal health now, while looking forward to the dawn of eternal perfect health! ■

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Staff

Fomentations

Hydrotherapy for influenza, plus!

What is a fomentation? The term refers both to the application of a moist heated substance to the body as well as to the heated materials themselves. Fomentation therapy is a relatively simple but very effective means of promoting healing and relieving discomfort. The primary physiological principle involved is that of drawing fresh blood, with its life-giving properties, to the body portion on which the hotpacks are applied.

Fomentations (fomies) can be used to relieve nervousness, restlessness, and muscle cramps. They can help fight illness by increasing the circulation of germ-fighting white blood cells. Fomies can also induce sweating, which increases the elimination of toxins through the skin. They can relieve congestion or pain in the internal organs by drawing blood away from the afflicted part to the body surface. And hotpacks can prepare the body for exercise, physical therapy, or massage.

The basics

A good pattern for a well-performing fomentation is 4 layers of 50/50 blend wool and cotton material, quilted to the size of 30 by 36 inches.* Wool provides insulation, which reduces danger of burning the patient, and cotton provides moisture retention, which facilates the conduction of heat. If not available, something simpler, such as thick cotton towels can be used. Either way, the basic process is to moisten and then heat the fomies until steaming hot, wrap them in a dry wool cover, and then place them on the desired body part, with one or more thick towels placed between the skin and fomentation pack to protect the flesh from discomfort or burns. The application of these hot fomies is generally alternated with brief applications of cold. This alternation of hot and cold (termed revulsive) increases the circulation, producing beneficial effects.

When to use

- Respiratory infections:
  - sinusitis: revulsive fomies to face.
  - pharyngitis and laryngitis: revulsive fomentations to the throat.
  - chest congestion from influenza, bronchitis, pneumonia, asthma, and pleurisy. Apply to chest.
- Painful nerves (neuralgias): fomentations as hot as possible, omit cold.
- Arthritis: apply to the involved joints, often followed by specialized massage.
- Myositis/fibrositis: hotpacks to affected areas, especially neck/upper back, followed by suitable massage.
- Difficulty sleeping and nervousness: mild prolonged fomentations to spine, followed by tepid sponge wipe-down and light massage.
- Low back pain: fomentations to affected area, followed by massage.

When not to use

- Do not administer hotpack therapy to a patient who does not willingly cooperate. This may be the case, at times, with very young or older individuals.
- Treatment should not be given to persons who have a loss of sensation, tendency to bleed or hemorrhage, lack of blood supply, contagious skin disease, or severe swelling from heart or kidney failure, or to patients who are unconscious.
- Do not, without direct supervision of a physician, give fomentations to a person with diabetic neuropathy or suspected acute appendicitis.
- Do not apply hotpacks over any swellings, such as sinuses, joints, and bursas, unless alternating with application of a towel partially wrung from ice water or with an ice bag, left on for a full minute.
- Omit application of cold when treating kidney stones, painful menstruation, a patient who is hypersensitive to cold, or pleurisy (unless pleuritic pain is present).**
- When in doubt as to whether the treatment is in order, check with a physician before administration.

The environment

The room in which the treatment is given should be appropriately warm, quiet, and well-ventilated but free from drafts. Assemble and arrange all materials and equipment before starting the treatment. Explain the basics of the procedure to the patient. Ask for the blessing and guidance of the Great Physician, who lovingly gave us these natural treatments. When giving the treatment, make your movements efficient, but not hurried. Foster a peaceful, hopeful atmosphere. Be attentive to the patient's comfort and physiological responses to the treatment.

General revulsive

Fomies, as we have indicated, can be applied for many different conditions. We are now going to focus, however, on an application called a "general revulsive," which is especially helpful for cases of flu and other respiratory infections.

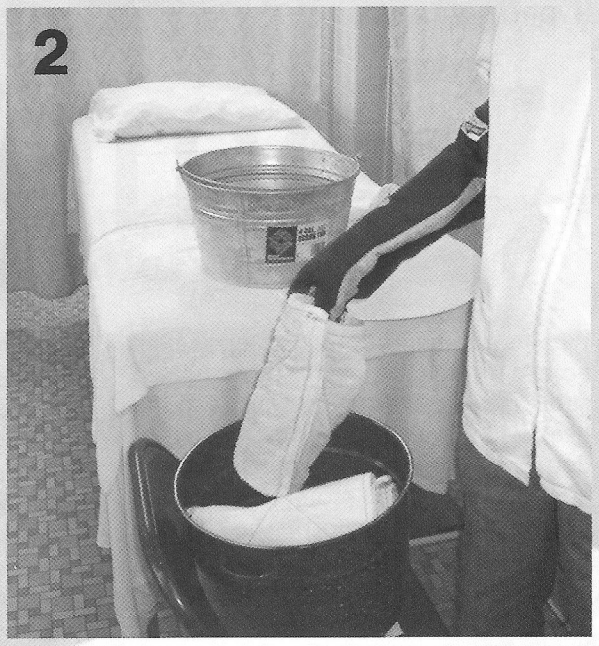
Materials and equipment needed

- A treatment table or bed, preferably high enough to prevent the therapist from needing to stoop.
- A small table or other suitable surface near the bedside on which to set the items needed during the treatment.
- Two sheets and a light blanket.
- Two or more heavy cotton towels.
- Several washcloths or hand towels.
- Two terry-cloth mitts. These can be made by folding a washcloth in half and sewing up the side and one end.
- A pillow for the patient's headrest.
- Four or five quilted fomie pads, or thick cotton towels.
- Five fomentation covers, preferably of wool material for optimal heat retention, and large enough to fully wrap

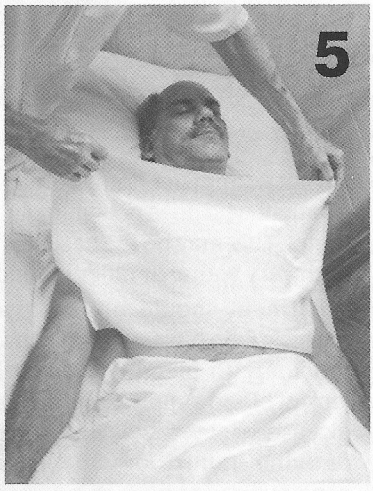
*For professionally-sewn fomentations and other hydrotherapy supplies, contact Quality Hydrotherapy Supplies at dpshurley@gmail.com or (423) 903-5041.

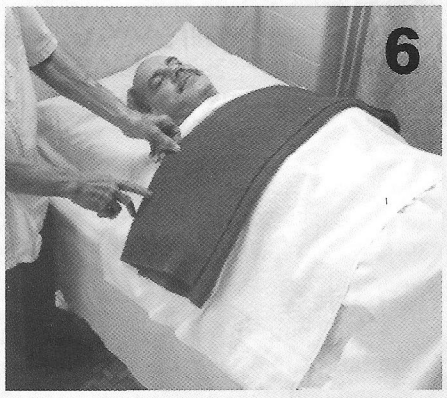
**Applying topical cold over painful spots in the lungs can help reduce the pain. Hotpacks can be applied to the surrounding areas of the chest where no pain is present. *Cont. on page 36.*

The basic set-up: a bed or treatment table draped with a plastic covering to shield it from moisture, then covered with a bedsheet. At foot of the bed, place a tub with warm water, with a towel underneath. Have another sheet and blanket at hand with which to cover the patient.

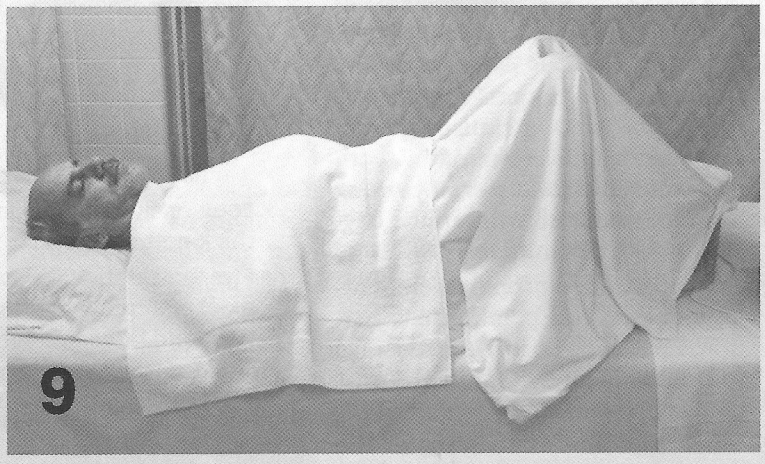


When removing a hot fomentation from the heating container, be sure to carefully protect your hand and arm from being burned by using oven mitts or some other protective covering.

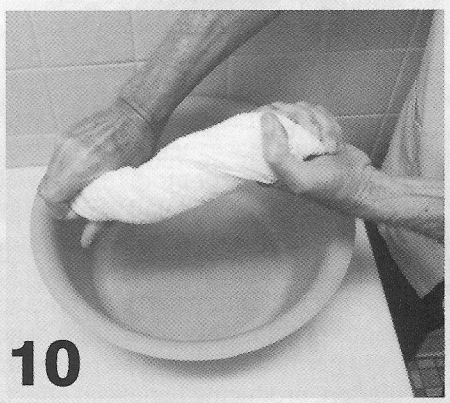




Lay a towel(s) across the patient's chest, place the first of the three hotpacks on it, cover with another towel to retain heat, and then lay bedcovers over patient, hotpack, and towels.

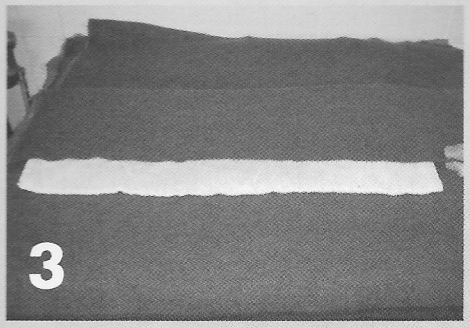


Leave each fomentation on for about three to four minutes, until it begins to lose its warmth.



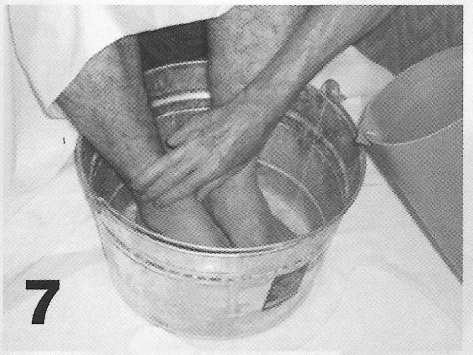
Photos: Bill Sherman

Wring out a handtowel from ice water. After removing the fomentation and setting aside, lay the cold towel across the patient's chest and rub vigorously but gently to close down the dilated blood vessels. This will send the blood on its way and enhance the circulation.

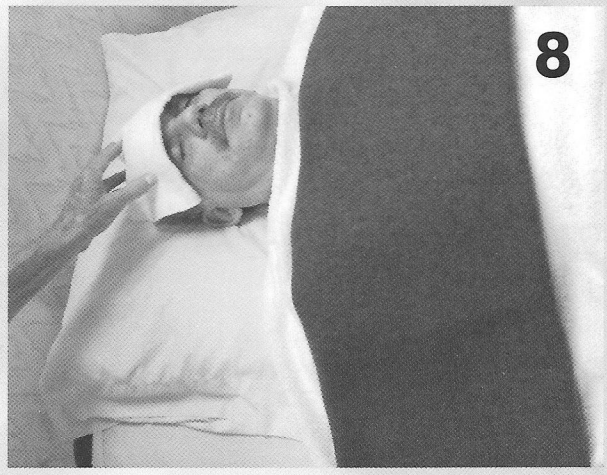


Lay the steaming fomentation flat on the opened wool cover (or towel) and quickly fold wrap over the fomentation to retain its heat.

Lay the wrapped fomentation (hotpack) on the bed, and cover with towels (how many depends on how thick they are and the patient's comfort level). Assist the patient to lie down with his back on the hotpack.



Add hot water to the foot tub, testing the temperature with your hand and pouring it in such a way that it does not burn the patient's feet. Add more hot water as needed during the treatment to keep the footbath warm. The water level should reach several inches above the patient's ankles.



During the entire treatment, keep the patient's head cool with a washcloth wrung out of ice water. Because the patient may sweat during the treatment, be sure to offer him water to drink, using a bendable straw so that he can continue to lie down.

After three cycles of chest fomentations followed by cold rubs, lift the feet out of the foot-bucket. Holding them in a toes-up position, quickly pour a pitcher of ice-cold water over them. Set them down on the dry towel lying under the foot-tub. Dry feet briskly, and then remove the foot bucket from off the treatment table or bed.

Conclude the treatment with a cold-mitten friction as follows: Begin with the arms and legs, uncovering only one limb at a time. Wring the mitts out from ice water, and quickly place on your hands. Starting at the extremities, rub briskly with a to-and-fro movement up to the shoulder/thigh, and then back again to the fingers/toes. Immediately and gently pat skin dry. Next, apply friction to the chest and abdomen; then have the patient roll on his side while you apply the friction to his back. Dry patient's back. Remove the hot pack that he has been lying on and allow him to lie back down. Give the patient clean, dry bedclothes and socks to put on, if he desires. Cover him with the sheet and blanket(s) and allow him to rest for at least 30 minutes. He should be comfortable, relaxed, and free from chilling or sweating.

the fomie. Thick cotton towels can be used if wool covers are unavailable.

- A metal container with a lid, deep enough to allow for a rack on which to keep rolled-up fomies out of the boiling water, eg., a canning kettle. Or, if using the oven to heat fomies, heavy-duty aluminum foil.
- Well-insulated oven mitts
- A large basin or small tub for a footbath. The bottom of the receptacle should be large enough so that the patient's feet can rest flat on the bottom with the knees bent at a 90-degree angle and deep enough so that the water can reach several inches above the ankles.
- Newspaper or plastic to place under the foot tub to protect the bedding from getting wet.
- Hot water for the footbath.
- A plastic pitcher for ice water.
- A basin of cold water with crushed ice.
- Drinking water and a bendable straw.

How to do the general revulsive

1. Heat water in the container in which the fomies will be steamed. Thoroughly moisten the dry fomies with warm or hot water (but not to dripping). Roll up like a tube and place vertically, preferably, on a rack in the heating container. Cover with lid and steam for a minimum of 10 minutes after the water has started to boil. Lay fomentation covers or towels open and flat in a stack on a surface near the heating fomies.

   Once the fomies are sufficiently heated, remove one from kettle. Use an oven mitt or towel to protect your hand and arm from being burned. Assemble hotpack quickly to preserve its heat: unroll it across the center of an open cover and then fold the wrap over the steaming fomie. Fold the hotpack in half lengthwise and roll quickly in a tube. This will help retain its heat and facilitate carrying it to the bedside.

   If you cannot heat the fomies on the stovetop, you can also use an oven or a microwave. For the oven method, roll fomies up after moistening, then wrap each *separately* with *heavy duty* aluminum foil. Heat at 450° to 500° F. for a minimum of 25 minutes. To microwave, wet the fomie, wring out excess water, roll up, and place in a pricked plastic bag. (Because it will not be kept warm in the microwave once the oven stops, it is best to heat the fomie *just before* using.) Heat *one at a time*, on high, until steaming hot. Remove and wrap in a cover. While this pack is on patient's chest, heat the next fomie in the microwave.

   Another method of heating, for towels only (*not* quilted fomies), is to dip the towels into a big pot of boiling water. This procedure needs to be done very carefully, so as not to burn oneself. Fold the towel lengthwise, grasp both ends, and twist tightly. Dip towel into hot water, leaving the two ends and your hands out. Lift thoroughly soaked towel out and stretch between both hands to remove excess water. Lay one end of the wet towel on an open towel or wool cover. Untwist the end still being held and lay it down as well on the flat cover. Quickly assemble.
2. Drape empty treatment bed with a plastic covering, two sheets, and a light blanket (in that order). Fold down one sheet and the blanket.
3. Assemble the basin of ice-water, drinking water with straw, pitcher with ice water, and place by the bed.
4. Place a piece of plastic across foot of bed. Lay a towel on top of the plastic. Then set the tub for the footbath on the towel. Add water to the tub, 105° F. or more depending on patient's preference, but no warmer than 102° for diabetics. A hot water bottle can also be used to heat the feet during the treatment, but it will not be as effective as the footbath.
5. Assemble one hotpack and lay vertically on bed, where patient's back will lie. Cover with a thick towel.
6. Have patient, clothed in shorts or underpants, lie down with his back on the hotpack. This hotpack will be left in place until the treatment is over.
7. Help patient put his feet in the foottub. Adjust water temperature as needed to his tolerance and comfort. Cover him and the foottub with the upper sheet and blanket.
8. Uncover patient's upper body and place a dry towel(s) over his chest, then replace covers. Bring a hotpack, uncover bedding again and lay hot fomie over the chest, on top of the dry towel(s). Cover hotpack with another dry towel to retain its heat. Pull bedcovers back up over over patient, including the hotpack. Be on the alert for any developing "hot spots"—bony or tender areas—under the hotpack. Protect these delicate spots from discomfort or burn by placing a dry small towel or washcloth between hotpack and patient. Note: towels tend not to hold the heat as long as do quilted fomies, so you may need to replace the hotpack sooner if using heated towels.
9. Because the patient may sweat during the treatment, be sure to offer him water to drink often. Using a flexible straw will allow him to drink without sitting up.
10. Wring a washcloth or small hand towel from the ice water and place on patient's forehead for his comfort and to prevent overheating. Reapply as needed during the treatment.
11. Check the temperature of the footbath and add more hot water as needed. Continue to do this periodically until the footbath is concluded. Be careful not to burn patient's feet when pouring in the hot water. Stir the added water in with your hand.
12. While first hotpack is lying on the patient's chest, prepare a fresh hot one and bring it to the bedside. Remove the spent one, set aside, and quickly blot the chest area with a hand towel wrung partly dry from ice water. Pat the skin dry, cover chest again with a dry towel, and apply the next fomie. Be sure the towel(s) used to protect the chest is dry. A *moist one conveys heat more readily and could burn the patient.*

    Note: If using more than one towel to protect the chest, all but one can be removed as the hotpacks cool, to economize the heating effect.
13. After three hotpacks have been given, apply cold water to the patient's feet as follows: uncover bedding over footbath. Lift patient's feet up out of the bath with one of your hands and hold them, toes up, above the tub. Using a pitcher of ice water, quickly douse them with cold. Set feet down on the towel placed beneath the tub and dry them briskly. Remove foottub from the bed.
14. Conclude the treatment by administering cold mitten friction: wring the mitts from the ice water and quickly slip them onto your hands. Remove the covers from one leg. Starting at

Continued on page 22.

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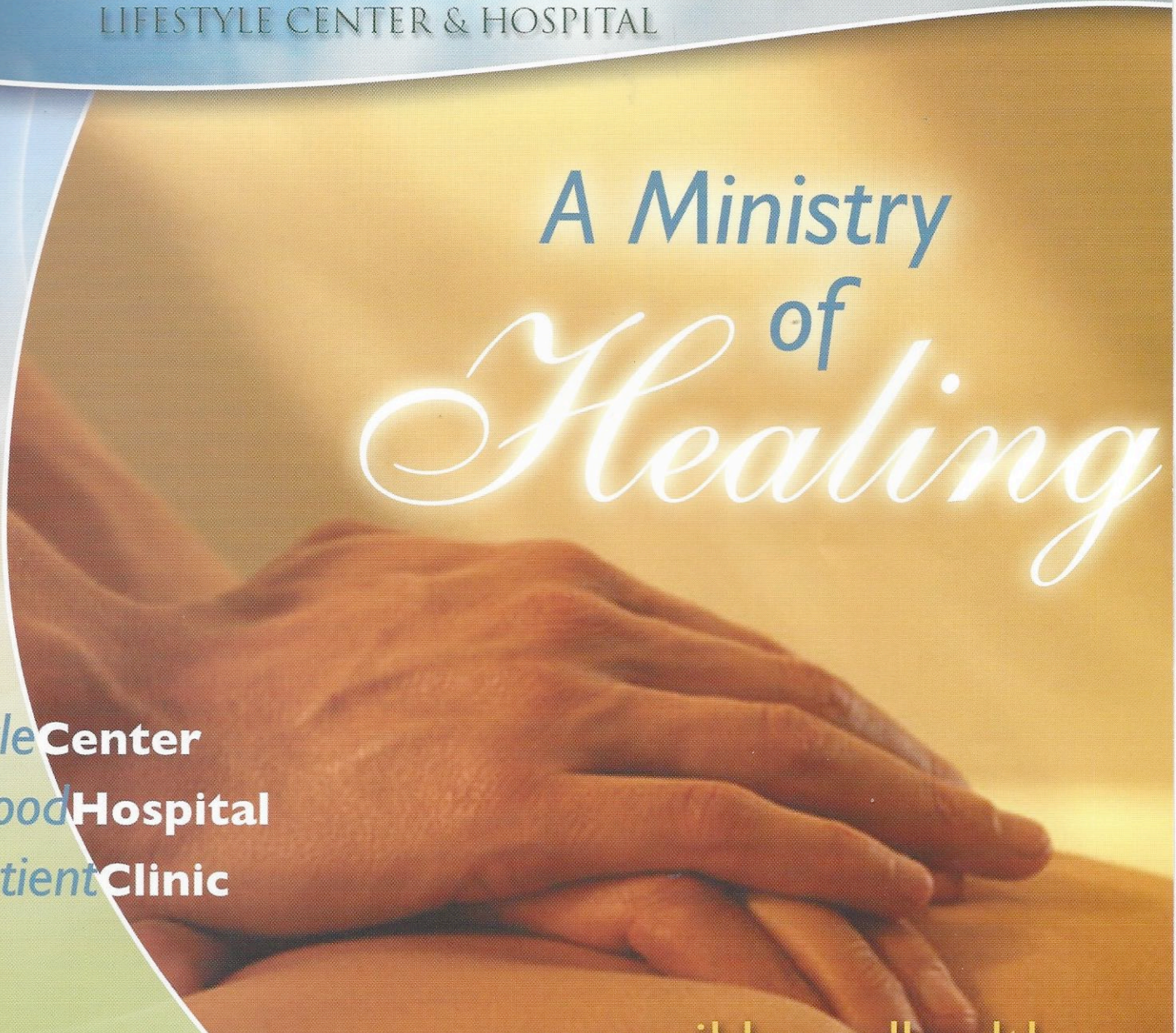

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