THE
PERFECT
PRESCRIPTION

SHELDON COHEN M.D. FACP
• Prescription drug: a medicine used to treat a symptom or an illness or prevent its occurrence.
• All prescription drugs are regulated by the government.
• Can only be prescribed by a medical professional including: physicians, dentists, nurse practitioners, psychologists, optometrists and veterinarians.

No big news here.
• Patients can never know how or what the reaction will be.
• It is a “crap shoot” and side effects can occur, even with a single pill—(example)...and
• Sometimes the side effects can have severe consequences.
• Prescriptions carry with them the potential for error that could be serious or fatal.
• Patients must take responsibility to prevent medication error.
• When your doctor writes a prescription, be certain that it is easily readable. If not, a pharmacist may have the same trouble. Ask that it be rewritten, or at the very least, that it be spelled out in writing.
• Sound-alike medications with similar spelling have been confused.
• There are also look-alikes, and generic medications made by different manufacturers may have a dissimilar appearance.
• So do not hesitate to ask and be certain the issue has been clarified before taking the medicine.
• The busy pharmacist could misread the medication or confuse it with a medicine with a similar sounding name.

• Pharmacists are so inundated with prescriptions that the use of pharmacy technicians is common and failure of the pharmacist to check everything the technician does has also caused prescription errors.

• Patients must double-check this complicated process.
• plendil isordil
Datum: 23.11.190

Don't write like this
• A written list of all medications prescribed by all physicians should be brought to every doctor visit.

• Some larger clinics and University Medical Centers will have the full medication list printed out for evaluation at each visit.

• If your physician is not doing this, come prepared with a full medication list including vitamins, herbs and dietary supplements, or brown-bag the medicines and bring them along. Your physician will appreciate this help.
• Physicians must be made aware of any medication allergies. They can not know in advance what a patient may or may not be allergic to. Prescribing medication is a risk that is never taken lightly.

• Patients allergic to any medication should wear a wrist band identifying the offending agent or agents.
• Anytime a patient is given a prescription they must know the following:
• What is the medicine and what does it do?
• How long should it be taken and at what intervals?
• What are the side effects I should watch out for? If they occur what should be done?
• Are there any potential drug-food or medication-medicine interactions that may cause a problem by enhancing or hindering the action of the prescription?
• Are there any activities that must be avoided?
• This may soon change as we enter the era of **personalized medicine**: tailoring treatment to a patient’s profile.

• The genetic variations in our genes can have a profound effect on how our body handles medicine.
• Genetic differences are one reason that ½ of the 292 billion paid for prescription drugs in 2008 didn’t help patients

• We are throwing chemicals at people that have an efficacy of 30 to 50 %

• Herceptin...Warfarin......Plavix

• Mail-out gene testing kit.
• The day will come when gene variations will be determined enabling personalization of therapy.
• This will hopefully eliminate the gamble that is taken today every time a prescription is written Ex...Norm Anemia.
• The result will be superior medication choices with safer dosing options.
• Drug companies will be able to develop safer drugs by excluding, in clinical trials, those who have the genetic variation which will cause an adverse interaction with the drug. (TV)
• Health care costs will be reduced by reducing the number of deaths and hospitalizations from adverse drug reactions. We are in the early stages. The future holds great promise.
STATIN DRUGS

• To reduce cholesterol that will not come down with lifestyle changes, the statin drugs are “little miracles.”
• They are extremely effective. Many millions are reaping their benefits.
• They have changed the therapy of coronary artery disease. But they, like all others, have side effects.
• Muscle pain and weakness is a result of muscle breakdown in the body (rhabdomyolysis) caused by the statin drug.
• The muscle breakdown products must be eliminated by the kidneys and they may overload the kidneys resulting in kidney failure that could result in death.
• The other major symptom of rhabdomyolysis is red, dark or cola colored urine.
• In a twelve year period over 3300 cases of rhabdomyolysis were reported.
• This figure, as bad as it is for those afflicted, represents a very tiny percentage of the millions who take the drug, so the benefit-risk ratio is acceptable.
• Statins may also cause a peripheral neuropathy—damage to the nerves that may result in muscle weakness, numbness, tingling, or burning sensations.

• Some patients experience memory loss and an inability to concentrate and worry that they are developing Alzheimer’s disease. The memory loss is more than patient perception, but is confirmed by family members.

• Interestingly, a new study suggests that one of the statin drugs lowers the risk of Alzheimer’s disease and Parkinson’s.
• AND:

• Statin drugs inhibit angiogenesis!

• Sub plot?
• 19,000,000,000
• All blood vessels are formed in utero
• In adults they do not grow except:
  to build uterine lining every month..
  during pregnancy (placenta)..
  injury (under scab)..
• So body regulates blood vessel growth through stimulators and inhibitors of angiogenesis.
Diseases with excessive angiogenesis:
cancer, blinding diseases, psoriasis, arthritis, endometriosis, aids-kaposi’s sarcoma, alzheimers, obesity, multiple sclerosis, rosacea cerebral malaria.
• Diseases with insufficient angiogenesis: chronic wounds, coronary artery disease, peripheral artery disease, stroke, neuropathies, pre-eclampsia, hair loss, erectile dysfunction.
• CANCER

WITHOUT

DISEASE!
• BLOCK ANGIOGENESIS
AND
CANCERS CAN’T GROW UP

12 DIFFERENT DRUGS.
ANTI-ANGIOGENESIS DIET (EAT TO STARVE CANCER) X
• Green tea strawberries blackberries raspberries orange grapefruit lemon apples pineapples cherries red grapes bok choy kale soybeans ginseng mataké mushrooms licorice turmeric nutmeg artichoke lavender pumpkin sea cucumber tuna parsley garlic tomato olive oil grape seed oil dark chocolate
• End subplot.........
• So it is clear that with all prescribed medications—and over-the-counter medications—there are benefits and there are risks. The benefit to risk ratio is what must be evaluated before any medication is taken.

• This is a joint responsibility of the physician and the patient, with the final decision in the patient’s hands.

• NOW THE PERFECT PRESCRIPTION

   x
“Better to hunt in fields for health unbought, Than fee the doctor for a nauseous draught. The wise, for cure, on **EXERCISE** depend; God never made his work for man to mend.”

John Dryden

1628-1687
"As long as a person exercises and exerts himself...sickness does not befall him and his strength increases.... But one who is idle and does not exercise...even if he eats healthy foods and maintains healthy habits, all his days will be of ailment and his strength will diminish."

Maimonides
1137-1204

x
• With regular exercise one will feel better, have more energy, avoid illness, maintain ideal weight, sleep better and live longer. These benefits are open to all regardless of age. (93)
• Best yet, when approved by a physician and done as directed there will not be concern about dangerous side effects.
• There has never been a therapeutic agent that could equal it and there never will be. It affects multiple organ systems. It is a miracle—and it’s free!
Let's discuss its benefits in alphabetical order.

BUT FIRST:
Physician approval is recommended for exercise if one falls into one or more of the following categories:

- A family history of heart problems
- Older than forty if a man and fifty if a woman
- Overweight
- A smoker
- Diagnosed as having hypertension or an elevated cholesterol
- Experiencing any chest or arm pain or dizziness with exertion
A is for Alzheimers

• February 3, 2010 — Participating in a sustained exercise program may decrease cognitive decline in patients older than 55 years, according to results from 2 new studies published in the January 25 issue of the *Archives of Internal Medicine*.

• In a cohort study from Germany, investigators found that moderate or high physical activity was associated with a lower risk of developing cognitive impairment in patients older than 55 years.
• The second randomized controlled study showed that resistance training programs improved the cognitive skills of attention and conflict resolution in women between the ages of 65 and 75 years in Canada.

• "Our population-based prospective study of a large cohort of elderly subjects found that lack of physical activity yielded a significant association with incident cognitive impairment after 2 years," wrote Thorleif Etgen, MD, assistant professor in the Department of Psychiatry and Psychotherapy at the Technische Universität in Munich, Germany, and colleagues.
In an interview with Medscape Neurology, Dr. E. said that he was amazed at the extent of the findings. "Physical activity cut in half the odds of developing incident cognitive impairment. We were also surprised that moderate physical activity had nearly the same effect as high physical activity."

"The population of older adults is expanding, and with this, the incidence of cognitive decline and dementia is growing," he added. "There is a high demand for powerful and inexpensive methods of preventing or delaying these declines."
Current research demonstrates that exercise might shift the brain metabolic pathways that break down the amyloid precursor protein and prevent the buildup of amyloid deposits that cause Alzheimer’s disease.
OTHER METHODS

- Proper nutrition will reduce the risk of Alzheimer’s disease:
  - 1. Eating food low in cholesterol and saturated fats (heart healthy);
  - 2. Eating food with a high level of omega-3 fatty acids that are beneficial to cell membranes;
- These foods include:
  - coldwater fish such as trout, tuna, salmon, herring, and sardines;
  - canola oil, olive oil, peanut oil, flaxseed oil, green leafy vegetables;
  - brazil nuts, cashews, walnuts, pistachios, avocados.
• 3. Eating foods that are high in antioxidants that protect the brain from free radical formation have also been shown to reduce the risk of Alzheimer’s disease.
Normal Oxygen Atom

Electron Loss Creates Free Radical

Free Radicals Set Off Chain Reaction

Cell Membrane

Erosion of Cell Membrane

Cell Interior

Antioxidant Neutralizes Free Radical

Antioxidant
• These foods include:
  all types of berries;
dark-skinned fruits and vegetables such as beets,
  spinach, broccoli, brussel sprouts,
eggplant, red bell peppers, beets, red grapes, oranges,
cherries.
• Supplements such as a multivitamin including folic acid may help in Alzheimer’s disease prevention. Research has shown that those deficient in folic acid were three times more likely to develop Alzheimer’s disease.
• Experts agree, however, that it is better to obtain supplements from food.
• Mental activity will reduce the risk of Alzheimer’s disease
• Remaining mentally alert strengthens the connection between brain cells and can add more brain cells, contrary to the old idea that new brain cells do not form in adults. To benefit from this finding one must commit to a lifetime of learning: the Internet, educational TV, games, crossword puzzles, reading and writing.
• Social activity will reduce the risk of Alzheimer’s disease
• How?
A is for Aerobic capacity

• Human beings are aerobic because of living and growing in an environment of oxygen.
• Aerobic capacity is the amount of work done in this environment.
• Aerobic capacity is built up by exercise when we use the muscles of our arms and legs over an extended period of time.
• The energy for this activity is supplied by the utilization of the oxygen in our atmosphere.
• Aerobic capacity can be built up by walking, jogging, cycling and swimming and dancing.
• Other terms for aerobic capacity include aerobic power, maximal functional capacity, cardiorespiratory fitness, cardiovascular fitness and maximal oxygen uptake.
• As we age, our aerobic capacity declines and this has substantial implications for quality of life in those who enjoy good health, but is of greater significance to those with chronic disease.
• Some are genetically predisposed to Alzheimer’s disease.
• But researchers have found that exercise has the power to change the structure of their brain and reduce their risk to a level similar to one with no genetic predisposition.
• As one exercises and improves aerobic capacity, stamina is developed because of the bodies increasing ability to utilize oxygen. In addition we promote health in all organ systems by improving the physiological environment to deliver more oxygen.
A is for Anxiety

• RESULTS: Compared with no treatment conditions, exercise training significantly reduced anxiety symptoms by a mean effect Delta of 0.29 (95% confidence interval, 0.23-0.36).

• Exercise training programs lasting no more than 12 weeks, using session durations of at least 30 minutes, and an anxiety report time frame greater than the past week resulted in the largest anxiety improvements.

• CONCLUSION: Exercise training reduces anxiety symptoms among sedentary patients who have a chronic illness.
**B** is for **B**ack

- Low back pain is very common in adults and is caused by muscle strain or injury. As long as one is certain of the diagnosis—confirmed by a physician—then one can embark upon self treatment. There are, of course, more serious causes that must be ruled out.

- Fifty years ago the recommendation for low back strain would have been bed rest. As it turned out this did nothing but delay recovery. Simple measures such as staying as active as you can, the use of ice and possibly nonprescription pain relievers plus avoiding those positions or movements that bring on greater pain often is all that is necessary.
• As soon as the pain gets to a point that one is able, then exercise will put the icing on the cake. Special equipment is not necessary. The exercises are for the back, abdomen and legs. They will ease pain, accelerate recovery, minimize the risk of future disability and prevent recurrences.

• Personal black belt example.
B is for Balance and coordination

• Falls are a significant problem for the elderly.
• By the time one reaches the age of forty, balance and coordination have begun to decline. The rate of decline is slow; about one percent per year. But even at that rate, the decline could easily be about thirty percent by the time one reaches age 70.
• In one who leads a sedentary existence this rate of decline is inevitable. The greater the loss of balance and coordination one experiences, the greater the risk of falls; and falls can have very deleterious effects—fractures and head injuries, both of which can cause death.
• Much of this is preventable and all that is necessary is to exercise; and the time to start is at the age of forty.
B is for Blood clots

• Blood clotting is an important physiologic mechanism. If a blood vessel is injured, blood cells and fibrin strands form a clump at the site of injury to stop bleeding. Without this mechanism we could bleed to death from a simple cut.

• When blood flow is slowed by inactivity induced by sitting for long periods of time and failing to exercise, clots can form in the veins of the legs. If these clots break off and travel to the lung, it may be fatal if the clot is large enough. That is why long air travel can be dangerous.

• This danger increases if one is obese as the excess fat can squeeze the arteries and veins slowing blood flow even further.
Those at highest risk for blood clots are:

- Smokers
- Those who are bedridden
- The elderly
- Women on birth control pills
- Cancer patients produce chemicals that promote greater platelet production. Platelets are blood cells that play a principle and early role in causing blood to clot.

Those patients who fall into any of the categories above are urged to exercise if possible.
• A blood clot dissolver produced by the body and known as tissue type plasminogen activator (t-PA) is thirty percent lower in obese than lean men.
• However, once the men started upon an exercise program, the obese men had their levels increased to match the lean men.
• The conclusion was that regular aerobic exercise will reduce the tendency to clot.
• Another study done in the Netherlands on 7,860 people confirmed the above.
• Understand that the exercise should not be strenuous, because strenuous exercise with its tendency for injury may increase the risk for blood clots.
B is for Blood pressure

- Exercise and one’s blood pressure are inversely proportional. In other words the more one exercises the better (less) one’s blood pressure may be. 120/80.
- Blood pressure has a tendency to increase as one ages.
- Exercise can prevent that increase. This doesn’t mean running a marathon; walking for one-half hour at least three times per week may be enough. More will be better. Any aerobic exercise will do.
- Get in the habit of walking rather than riding. Take the stairs instead of the elevator. Mow the lawn. A physician should advise you.
• If already diagnosed with high blood pressure (hypertension), physician directed exercise will lower it on the average of five to ten points. If that is not enough, blood pressure medication will be necessary.

• Regular physical exercise strengthens the heart.

• Just as a stronger biceps muscle can lift a heavy weight with less effort, so too does a stronger heart muscle pump blood with less effort.

• It will take at least one month for the effect to be realized. The benefits will persist as long as the exercise continues.

• An additional benefit is that regular exercise (with proper eating, of course) will keep weight down and this will also help to keep blood pressure normal.
B is for Bones

• The steel framework of a building holds it up.
• Bones hold our body up.
• The steel framework is static.
• Bones are not.
• The bones one is born with are not bones of today.
• Osteoblasts are cells that bring calcium into bones to strengthen them. Osteoclasts are cells that take calcium from bones.

• There is a constant turnover.

• Lack of exercise slows osteoblastic activity, which results in less calcium delivery and weaker bones. Failure to ingest foods with calcium will have a similar affect.
• An exercise must be weight-bearing or strength-training in order to promote bone strength by stimulating bone formation. Swimming, for instance, is a great cardiovascular fitness exercise, but is not a weight bearing exercise.

• Walking, running, tennis, basketball and weight lifting are. And these exercises, if done with a doctor’s approval will promote bone growth and strength.
• Keep in mind that the bone strengthened by exercise is site-specific. If one runs, the leg bones will become stronger. If one lifts weights the arm and leg bones will both increase in strength. If one does arm curls sitting down only the arm bones will benefit.

• The benefits will last only as long as the exercise is continued on a regular basis.

• Age is no barrier. It has been shown that even at age ninety, bone strength is enhanced with exercises.
• Why is this important?
• Because of osteoporosis which means porous bone. Bone becomes thinned over time, becoming more brittle. The entire process is asymptomatic and fracture may be the first manifestation of the disease.
• Bones can become so brittle that even a sneeze, cough, bending over, or the simple act of lifting something may cause it to break.
• The hip and spine and wrist are mostly affected, but any bone may be involved.
• It is estimated to affect 28,000,000 Americans and is responsible for 1,500,000 fractures per year.
• Women are affected much more than men.
• The reason for the brittleness is the gradual loss of calcium from bone.
• Exercise and calcium ingestion are the main preventive measures.
C is for Cancer

• Published today by World Cancer Research Fund and the American Institute for Cancer Research, the report was to be presented to U.S. lawmakers on Capitol Hill this morning.

• It is based on 2007 findings about how different patterns of diet and physical activity affect risk of cancer. That earlier data was combined with dietary surveys from four countries -- the U.S., Great Britain, China, and Brazil -- to arrive at policy recommendations.

• In each of the four countries, the current report says, about a third of cancers could be prevented by proper diet, more physical activity, and avoiding obesity.
• In fact, almost two-thirds of cancer deaths in the United States are related to four major risk factors:

• tobacco
• poor diet,
• obesity,
• and lack of exercise.
C is for Cardiac disease

• The risk factors for coronary artery disease are obesity, elevated blood pressure, elevated cholesterol, smoking, diabetes and lack of exercise.

• So we will take the last one and discuss how physical activity can help prevent coronary artery disease.
• It has been shown that inactive people have double the risk of heart disease. How does exercise help?
• Burning calories by exercise causes weight reduction. The less one weighs the less the chance of heart disease
• Exercise will lower LDL cholesterol ("bad" cholesterol), and elevate HDL cholesterol ("good" cholesterol)
• Exercise will lower both systolic and diastolic blood pressure.
• With exercise, the heart muscle develops a bigger **stroke volume**. **Stroke volume** is the volume of blood that the left ventricle ejects with each beat.

• At rest our heart is beating at an average of seventy beats per minute. With each beat the heart pumps out about seventy milliliters of blood. This amounts to 70X70 or roughly five liters per minute resting **cardiac output**.

• With exercise the resting heart rate may decrease, but at the same time its efficiency increases to the extent that it will now deliver (instead of 70 ml per beat) about 90 ml per minute.
• What has happened is that the heart has become more efficient. It now performs the same work with less beats and less cardiac muscle energy demand. This means the heart is stronger, a benefit which effects the entire body.
C is for Collateral Circulation

• When an artery to any part of the body becomes blocked, how does blood get to the affected part? The answer is via collateral circulation.

• The body, in its wisdom, recognizes the blockage and promotes the development of small blood vessels which go past the block to bring blood and oxygen to that portion of the body that had been supplied by the blocked artery.

• This is a crucial mechanism and it is enhanced by exercise. Imagine the importance of this when it comes to coronary artery circulation. Gus.
D is for Depression (and stress)

• Exercise has been shown to be as effective in treating depression as antidepressants, individual psychotherapy and group psychotherapy. Numerous studies have proven this.
• What kind of exercise will be effective? The principle one is walking and the good news is that it brings rapid relief: within ten minutes after one study.
• Medications, if they work, will take at least two to three weeks to show improvement.
It has also been shown that the affects of exercise will be long lasting. In one exercise study, walking every day for seven weeks improved mood for five months.

The exercises are aerobic and include walking, swimming and bicycling.

Another study demonstrated that exercise will result in improvement as long as it continues.

Remember also that exercise has none of the side effects that are so common in antidepressants.
• How does exercise account for this improvement? The answer is: endorphins adrenaline, serotonin and dopamine.

• These are powerful hormone-like substances produced in the brain that work together and promote a state of well being and a sense of accomplishment.

• The bad news here is that the pain of an injury can be masked to the extent that one will exercise through the injury causing further problems. So listen to what your body tells you: get any injury checked out.
• Studies done on children through old age have shown that all age groups benefit.
• And by benefit is meant that not only depressive symptoms improve, but there is more vigor, less fatigue, less anxiety, less confusion, less stress, better integration with peers and improved mental functioning.
D is for Diabetes

- Research in Canada was done on 251 sedentary diabetics. They were divided into four groups:
  - no exercise
  - Forty-five minutes of aerobic exercise three times a week
  - Forty-five minutes of strength exercises three times per week
  - Forty-five minutes of both aerobic and strength exercises three times per week.
• The conclusion:
• Exercises can lower A1C. Aerobic activity burns calories and strengthens the vascular system including the heart. Strength training improves muscle strength and makes them more sensitive to the effects of insulin.
• Physician approval for any type of exercise in a diabetic is mandatory.
• Exercise can lower A1C as well as any medication being used today for diabetes.
D is for Digestion

• One digestive problem is constipation.
• A common cause is the lack of fiber in the diet and an absence of physical activity.
• The solution, therefore, is high fiber foods such as whole grain breads, high fiber cereals, beans, fresh fruits and vegetables, and light, low impact exercise done on a regular basis.
• The exercise end result as far as the digestive tract is concerned is a stronger and more regular contraction of the intestinal muscles. And the combination of the dietary modification and the exercises should alleviate constipation unless there are more serious causes (and there are), so medical consultation is mandatory.
• Another problem that can be relieved by exercise is heartburn. But some heartburn is due to gastroesophageal reflux disease, a condition where acid in the stomach migrates back up the esophagus causing the burning symptom. This condition if left untreated can result in esophageal inflammation or esophageal cancer. So, again, medical consultation is a must.

• Remember, exercise should be done at least two hours after a meal.
E is for Endometriosis

- The endometrium is the name for the cells that line the uterus. This is where these cells belong.
- Endometriosis is a medical condition where the uterine lining cells also grow outside of the uterus, usually on fallopian tubes, ovaries or tissue lining the pelvis.
- Even though the endometrial cells are outside of the body, they still react as if they were in the uterus and they bleed each month, irritating the surrounding tissue.
Common sites for endometrial growths in red

- Ovary
- Rectum
- Uterus
- Bladder

Normal endometrial lining
• Researchers have determined that aerobic exercises such as jogging, bicycling or skating at least three times a week for one-half hour can reduce the risk of endometriosis by two-thirds.

• Also exercises raise endorphin levels that promote endometriosis pain relief and reduce estrogen levels that have the effect of reducing pain as well. So exercise has a dual effect: it not only helps prevents endometriosis, but relieves symptoms as well.

• Alcohol and caffeine have both been shown to raise estrogen levels. Women with endometriosis should avoid these substances.
H is for HDL cholesterol

- HDL cholesterol, also known as good cholesterol, pulls cholesterol out of the artery walls that would have otherwise been part of plaque that blocks arteries and causes heart attacks, peripheral artery disease or strokes. It takes this excess cholesterol back to the liver for processing. Better back there than in the artery walls.

- It has been established that aerobic exercise will raise HDL levels and the longer one exercises the greater the HDL increase.
There are also other ways to raise HDL:

• Weight loss
• Remove trans-fats from the diet
• Stop smoking
• Add soluble fiber twice per day
• Increase monounsaturated fat in the diet (olive oil, canola oil, peanut butter)
• Eat fish as omega 3 fatty acids can raise HDL cholesterol.
I is for Immune system

• The immune system: a sophisticated team of specialized organs and cells that differentiate self from non-self.

• Moderate, consistent exercise has been shown to boost immunity over the long-term. It has been proven that it boosts the production of immune system cells. This is reflected by the fact that exercise protects us from picking up upper respiratory infections.
• During exercise immune cells circulate through the body faster and are better able to kill bacteria and viruses.

• After exercise, the immune system returns to normal, but consistent exercise improves functioning longer. The key is moderation and consistency.
L is for Longevity

- There have been enough studies done to make a definite assertion about exercise: It increases longevity.
- Records of more than 5,000 elderly and middle aged showed that those with moderate levels of exercise activity—walking for thirty minutes a day for five days per week—lived 1.3 to 1.5 years longer.
- And those who engaged in vigorous exercise—running for half an hour per day five days per week—lived 3.5 to 3.7 years longer.
• Not only does exercise add to years, but the quality of life is greatly enhanced; one lives healthier. Also remember it is never too late to start. Check with a physician and with approval—get moving.
• Israeli study:

“Physical activity increases the likelihood of living longer and staying functionally independent," the study authors conclude. "The clinical ramifications are far reaching. As this rapidly growing sector of the population assumes a prominent position in preventive and public health measures, our findings clearly support the continued encouragement of physical activity, even among the oldest old."
L is for Lymphedema

• If the lymph circulation is disrupted it can cause swelling known as lymphedema.
• If a women has a mastectomy with removal of the lymph nodes under the arm, the lymph circulation has been disrupted by surgery or radiation therapy or both.
• Since the lymph circulation has been blocked, the arm and hand may swell.
• For many years physicians have instructed their mastectomy patients not to do any lifting with the affected arm, fearing that the swelling will increase. This has changed.

• A new study, randomized to include half of the women doing weight training with the affected arm and half the women doing no exercise, demonstrated that the women who exercise had a significant decrease in the amount of swelling in the affected arm as well as greater strength in that arm.
M is for Metabolism

- We need energy (calories) to live. We use these calories—when exercising, sleeping, eating; it doesn’t matter. Calories are burned to keep you going. Metabolism is the number of calories used to maintain your bodily functions.
- Muscle needs more calories to function than fat does. Therefore, the more muscle in relation to fat, the higher the metabolism. Muscle mass can be increased by weight and strength exercises. Fat can be reduced by aerobic exercises. The net result will be to increase metabolism. There will be improved functioning.
• Besides the good effect on muscles, one will also:
• Sculpt the body
• Strengthen bones
• Improve posture
• Increase metabolism
• Elevate mood and your sense of self-worth
• Improve appearance.
is for Obesity

• "Genetics may be one factor that causes obesity, but according to a new study in the Archives of Pediatrics & Adolescent Medicine, "those genes might not hold sway over an adolescent's weight -- if that teen exercises."

• Before reaching that conclusion, researchers in Sweden "collected data on 752 teens who took part in the Healthy Lifestyles in Europe by Nutrition in Adolescence Cross-Sectional Study, which was conducted in 10 European countries between October 2006 and December 2007," HealthDay (4/5, Reinberg) reported. "Among these teens, 37 percent did not have FTO mutations, 47 percent had one copy, and 16 percent had two copies." Indeed, "copies of the mutation were linked with higher body mass index," and "a higher percentage of body fat and a larger waist."

• But, "an hour a day of moderate to vigorous exercise can overcome the effect of" rs9939609, the "so-called A allele of the fat mass- and obesity-associated gene, or FTO," MedPage Today (4/5, Smith) reported.

• Notably, "the research supports US guidelines that tell children and teenagers to get an hour or more of physical activity daily, most of it aerobic activity such as running, jumping rope, swimming, dancing and bicycling," the AP (4/6, Johnson) reports.
O is for Osteoarthritis

• Osteoarthritis is caused by the breakdown of cartilage in our joints. Cartilage is a protein that acts as a cushion between the bones of a joint.
• At least twenty million people suffer from this problem.
• It is more common in males under age forty-five and in females after age fifty-five. It affects the spine, hands and feet, and weight bearing joints such as the knees and hips.
• It was always thought that exercise will aggravate cartilage destruction, thus worsening osteoarthritis—but a recent study has changed this perception.
• Two researchers in Sweden recruited forty-five people between the age of thirty-five and fifty who had knee meniscus repair and were thus prime candidates for future development of osteoarthritis. They randomized them to an exercise and a no exercise group. The exercise group was given aerobic and weight-bearing moves for an hour three times per week for four months. MRI scans were used to measure a specific chemical in cartilage that determined its strength and elasticity.
• In the exercise group, many more reported improved symptoms and gains in physical activity. Plus the improvements in the MRIs showed a strong correlation with the increased exercise.

• The conclusion was that cartilage responds favorably to exercise just as does bone and muscle.
P is for Parkinson’s disease

- Dr. Bloem said he hoped that perhaps regular exercise might slow the progress of Parkinson’s disease. It does in rats, he said, and he is running a clinical trial in 600 patients to see if exercise also slows the disease in humans.
S IS FOR SKIN

- Exercise, by increasing circulation, delivers vital nutrients to skin cells and removes toxins from skin cells. This provides optimal conditions for the skin to make vital collagen—building block support for wrinkle free skin.
• In those with an acne problem, exercise reduces stress and with stress reduction there is less adrenal gland production of testosterone like hormones which can aggravate acne. Also, reduction of these hormones may reduce or slow hair loss.

• Exercise also increases sweating that has the benefit of unplugging pores which will help to improve acne and reduce flare-ups.

• Overall, skin health is improved resulting in an optimal complexion.
S IS FOR SLEEPAPNEA

• The American Journal of Respiratory and Critical Care Medicine, scientists recruited a group of people with obstructive sleep apnea and split them into two groups. One was trained to do breathing exercises daily, while the other did 30 minutes of throat exercises, including swallowing and chewing motions, placing the tip of the tongue against the front of the palate and sliding it back, and pronouncing certain vowels quickly and continuously.
• After three months, subjects who did the throat exercises snored less, slept better and reduced the severity of their condition by 39 percent. They also showed reductions in neck circumference, a known risk factor for apnea. The control group showed almost no improvement.

• Other randomized studies have found similar effects. One even showed that playing instruments that strengthen the airways, like the didgeridoo, can ease sleep apnea.
S is for Stroke

• April 8, 2010 — Women who walk 2 or more hours a week, especially at a brisk pace, are significantly less likely to experience any type of stroke than women who do not walk, according to long-term follow-up findings from the Women's Health Study (WHS).
T is for Triglyceride

• There are two sources of triglyceride (blood fats): eating fatty foods and converting carbohydrate to fat in the liver.

• Too much triglyceride in the blood can cause atherosclerosis, promote blood clotting, and, in excess, can cause pancreatitis, a potentially serious inflammation of the pancreas.
• One critical aspect of an elevated triglyceride is that it is often associated with other abnormalities including low HDL, high LDL, abdominal obesity (pot belly) elevated blood pressure, insulin resistance and type 2 diabetes mellitus. This collection of findings is known as the metabolic syndrome.

• Those who develop this syndrome are prone to coronary artery disease and diabetes.
• Those who have this syndrome (about 30 percent) have double the risk of heart disease and four time the risk of diabetes mellitus. The way it can be reversed is to correct the high-fat, low-carbohydrate diet and lack of exercise which causes it. Exercise gets rid of muscle and body fat and lowers triglyceride and can reverse the metabolic syndrome, thus lowering cardiac risk. In the more severe cases medication may also be necessary.
V is for Varicose Veins

- Veins, which carry blood to the heart, have valves within them that prevent blood from backing up. When the valves become defective they do not close properly and blood backs up widening and accentuating the veins.
- Varicose veins may be due to a genetic problem, obesity, pregnancy, heart disease, or abdominal tumors.
- Exercise is effective in causing leg muscles to contract (running, walking, bicycling) thus squeezing the blood on to the heart. Most varicose veins are best left alone. Check with your physician if you have severe pain as it could mean a clot has developed.
**W** is for **W**eight control

- Weight depends upon the amount of calories ingested minus the amount burned. Burning less than ingested, will result in the excess being deposited as fat, adding weight. If one burns more than ingested, the excess is removed from fat stores and weight will decrease.
• Since regular exercise burns calories, it is an effective way to reduce fat stores (along with sensible diet, of course). So, exercise plus sensible calorie reduction is doubly effective. This is best done with physician consultation.
SUMMARY

- There you have it; The Perfect Prescription—If taken with medical supervision it is safe and free of the specific side effects that come with every prescription drug. It does not treat one problem only; it treats virtually every organ system and results in good health, better mood, increased longevity plus all the other pearls you just read about. Where will you ever get a prescription to equal it? You can’t. So see your doctor, get a complete history and physical examination and risk factor analysis. Practice early detection and prevention. And, if you get the go-ahead, get out there and do some regular exercises—for the rest of your life. You will be amply rewarded.