Smart Life Forum

SmartLifeForum.org

presents

Karl Knopf, Ed.D.

on

Adaptive Physical Education for Seniors

Thursday, Mar 20, 2008, 7:00 PM

Cubberly Center, Rm H-1
4000 Middlefield Road
Palo Alto, CA

FUTURE SPEAKERS

April 17, Stephen Strum, MD
Related Health Issues to Prostate Diseases

Note1: FMBR meeting March 28: The speaker will be Marilyn Schlitz, Ph.D, who will be speaking about her new book Living Deeply, covering the last ten years of research at the Institute of Noetic Sciences. See fmbr.org

Note2: OHM Society will be holding their annual meeting February 29 through March2. Contact ohmsocietysf@yahoo.com for program. Our rate will be $200 for all three days or $80 for Friday, $100 for Saturday and $40 for Sunday.

Note3: At this years' New living Expo, April 25-27 SLF will be exhibiting. Volunteers who signed up at the December meeting see Stan Durst for sign-up times.

Meet Dr. Karl Knopf

Karl Knopf, Ed.D. is a professor of Adaptive Physical Education at Foothill College in nearby Los Altos Hills. The program has evolved into the largest in California. He is also founder and president of the Fitness Educators for Older Adults Association. Dr. Knopf has been involved in the health and fitness of older adults and the disabled for over 30 years. During this time he has worked in almost every aspect of the industry from personal trainer and therapist to consultant to major Universities such as Stanford University's School of Medicine, University of North Carolina, University of California, as well as the State of California and professional organizations.

He has authored numerous articles, and written eight books on topics from Water Workouts to Fitness Therapy. He is a frequent guest on Public Television's "Sit and Be Fit" show as well as a regular guest on radio, and is often interviewed for print media on issues relating to senior fitness.

In addition to Karl's teaching and advocating for older adults, Dr. Knopf has been an expert witness in cases involving injuries to the disabled and older adults who were exercising incorrectly. Currently Karl is Coordinator of the Adaptive Fitness Technician Program and Life Long Learning Institute at Foothill College, where he has taught Adaptive Physical Education for over 30 years. If you would like to contact Dr. Knopf, he can be reached at 408-450-1224 or knopfkarl@fhda.edu.

Dr. Knopf is the co-author of the ISSA (International Sports Sciences

Association) Specialist in Fitness for Older Adults Certification program and the ISSA Adaptive Fitness Specialist Certification program. Dr. Knopf has been instrumental in developing programs for mature adults, persons with arthritis and chronic pain, persons with disabilities, and the developmentally delayed. His favorite activities are reading about the latest developments in health and fitness, as well as being outside and active.

Main Presentation

Adapted Physical Education (APE) is medically recommended exercise adapted to meet the needs of the patient with a chronic health concern. Disabling conditions addressed in APE can be major, such as a stroke, spinal cord injury, or children with serious developmental disorders. Or they may be relatively minor, where physical exercises are adapted to meet the needs of an older adult with arthritis, or one who just wants to improve his fitness level.

The main focus of Dr. Knopf's APE program is older adults. The goal is to train the older student who may want to maintain or improve his independence and physical function. Research supports the contention that proper exercise is good at any age.

The challenges facing the 50+ population vary significantly as it is not a homogeneous group. For example, there are substantial physical differences between a typical 50 year old and a typical 70 year old, and between a healthy 70 year old and one with health issues. Part of this difference comes down to lifestyle, which means how you eat, move, sleep and think. Lifestyle includes staying engaged mentally and socially. What we do today will influence how we age tomorrow. Most of the things that deteriorate with age can be positively influenced by daily physical activity. Many Baby Boomers are in denial about their aging; they try to conceal it rather than embrace it.

Cardiovascular exercise is important, as is weight training. Muscle is the furnace that burns calories. If your muscles get weak and wither away, then your metabolism slows down and the normal activities of living become difficult - sometimes so difficult that the person can no longer function independently, which is a critical turning point. Loss of independence is what most older people fear most - even more than death. Strength training is one of the most effective ways to stay healthy and fight the signs of aging. The safest way to boost your metabolism is by adding muscle.

Avoiding injury is important, so exercise smart, not hard. More is not necessarily better. The best way to exercise is to have a therapist or doctor explain what movements to avoid, and which specific exercises to do and which to skip.

Staying fit requires one to build physical activity into ones life. For example, Dr. Knopf bikes to work as often as possible, walk the dogs and does his own yard work. Karl lifts weights three to four times a week, stretches every day and either swims or does water exercises daily.

Dr. Knopf is inspired by his students, some of whom are very disabled, who will get up and move without complaining. He also sees some people over 80 years old move with the energy and excitement of 30-somethings. Karl even has 100 year old students who smile and move around. He is excited

and inspired when he sees older people begin regular exercise, and then make remarkable and obvious improvements in mood and energy.

The body of a person over 50 can do most of the things a 30 plus body can do, but they just need to train a little smarter and be more careful. Many 50+ people will over train and cause injuries. The solution is to carefully warm up, and like a vintage car, their bodies will need a little more TLC: more frequent tune-ups by a qualified health professional will be required. Then it can run as well as a newer model; a fit 50 year old is still in better shape than an unfit 30 year old.

The Role of Exercise and its Benefits: Diabetes

Exercise has many profound benefits. For example, studies suggest that exercise can positively influence the course of diabetes. The United States Center for Disease Control estimates that one out of every 17 Americans has diabetes. Diabetic populations develop cardiovascular disease at an earlier age and with a greater severity than do people who do not have diabetes. It has long been recognized that diabetes accelerates the arteriosclerotic process and is considered an independent risk factor for heart disease, right along with obesity and high blood pressure. Diabetes not only can contribute to heart disease but can also contribute to blindness and the loss of limbs due to poor circulation.

Dr. Knopf spent many years working with visually impaired people who had lost their vision secondary to diabetes, and as a young therapy intern had to observe an amputation of a leg secondary to diabetes. The bottom line is that diabetes is not a simple and common condition to be dismissed as just a blood sugar imbalance.

There are two distinct forms of diabetes: Type 1 (also known as "childhood", "juvenile" or "insulin-dependent") diabetes mellitus and Type 2 (also known as "non-insulin-dependent" or "adult-onset") diabetes mellitus. About 90 percent of the diabetic population has the Type 2 form of the disease. Whereas Type 1 is characterized by an absolute insulin deficiency caused by an auto immune destruction of the insulin-producing beta cells of the pancreas, Type 2 is characterized by insulin resistance, relative insulin deficiency and hyperglycemia.

Many experts in this field believe that proper lifestyle changes can and will positively influence the course of Type 2 diabetes. Many doctors suggest that the first course of treatment for a person with adult onset diabetes is to get more active, lose weight, and improve the diet.

The interplay between exercise and diabetes is a critical one. This is because of the way in which exercise influences metabolism. Exercise contributes to glucose control, weight control, and stress management.

In short, exercise has been seen to:

1. Improve glucose uptake and help control glucose levels.

2. Promote weight control. Reduction of excess body fat has been shown to decrease insulin resistance.

3. Help regulate stress level. Or, said another way, exercise de-stresses the body. DIS-stress (bad stress) can disrupt the diabetic's ability to maintain the

delicate balance of hormones, ketones, free fatty acids, and urine output.

General Cautions

1. Avoid stressful activities to the feet.

2. Avoid exercise when blood sugar levels are greater than 250 mg/dl. (Consult patient's physician for specific guidelines.)

3. Avoid exercise if blood pressure is elevated above 160 systolic/100 diastolic. (Consult physician for specific recommendations.)

4. Avoid exercising in extreme weather conditions.

5. Avoid heavy training with clients who have retinopathy, a disorder of the retina resulting in impairment or loss of vision. (Retinopathy is usually due to damage to the blood vessels of the retina, occurring, for example, as a complication of diabetes or high blood pressure.)

Guidelines

1. Aerobic exercise should be done most days of the week at as comfortable a pace as can be tolerated (50 to 70% maximum VO2 for 20-40 minutes).

2. Monitor blood sugar levels and blood pressure.

3. Clients who experience hypoglycemic reactions should have quick access to sugar on hand.

4. Never exercise on an empty stomach and have plenty of fluids available.

5. Always warm up and cool down.

6. Always stay alert to the potential for hypoglycemia and diabetic coma.

Tips

1. Have clients obtain medical clearance and a stress ECG (electrocardiogram).

2. Make sure that your clients are aware of the effects that their medication will have on exercise.

3. Remind your clients to be mindful of foot hygiene and to carefully monitor the healing process with regard to cuts.

4. Encourage clients to adopt exercise and activity as a way of life.

5. Make exercise fun!

Exercise and Longevity: Literature Review

A vast body of evidence has been accumulating for decades on the profound benefits of both aerobic (active, "with oxygen") and anaerobic exercise. Rates of disease and death are dramatically reduced for all of the major progressive diseases such as heart disease (the #1 killer in the US), stroke, Type 2 diabetes, and cancer. Humans evolved to be physically active, and part of the modern epidemic of degenerative diseases results from our society's excessively sedentary lifestyle. The most consistent message from the intensifying research into the body and brain is simply: use it or lose it. Most of our ancestors spent their lives as hunter-gatherers only a few dozen centuries ago. The DNA of 21st century humans is more than 99.99% the same as our hunter-gatherer progenitors. These people exercised a lot. They ran, they

climbed, and they walked. Their bodies – read that, our bodies – thrived on this vigorous regimen. (Fantastic Voyage, Kurzweil & Grossman, 2004, p. 337).

The Harvard Alumni Health Study

This study, which tracked the health of thousands of male graduates from 1962 to 1988, was summarized in the Journal of the American Medical Association, (April 19, 1995). They compared men who had engaged in intense, vigorous activity over the years with those who had engaged in non-vigorous activity.

They concluded that: "Among men who reported only vigorous activities (259 deaths) we observed decreasing age-standardized mortality rates with increasing activity, among men who reported only non-vigorous activities (380 deaths), no trend was apparent...These data demonstrate a graded inverse relationship between total physical activity and mortality Furthermore, vigorous activities but not non-vigorous activities were associated with longevity..."

The Framingham Study

A survey of the effects of exercise on mortality in 1,404 women aged 50-to-74, in the famous Framingham study was reported in the American Heart Journal in Nov 1994. The scientists found that after 16 years of follow-up, 319 (23%) of the women had died, but that the mortality rate was lowest in women who had exercised most vigorously.

Extending Lifespan in Diabetics

Insulin-dependent ("juvenile") diabetics suffer from faulty pancreatic function, which keeps them from producing the insulin they need for carbohydrate metabolism. Such diabetics suffer a higher than normal rate of cardiovascular diseases and other pathologic complications that lower the quality of their lives and shorten their lifespan.
A study of the effects of exercise in 548 insulin-dependent diabetics at the University of Pittsburgh compared to non-diabetic controls between 1981 and 1988 showed that exercise level varied inversely with the occurrence of diabetic complications and mortality *Sedentary male diabetics were three times more likely to die than physically active male diabetics.* A similar but lower correlation was found in female diabetics.

In a study of 6200 men conducted at the Veterans Affairs Palo Alto Health Care System and Stanford University, and published in 2002 in NEJM, physical fitness was determined to be a more important factor in longevity than high blood pressure, high cholesterol levels or even bad habits such as smoking. Researchers found that men with the lowest exercise capacity were roughly four times more likely to die during the study than the fittest participants. Altogether, physical fitness was shown to have a greater impact in the risk of death than all other well-publicized risk factors for heart disease. For example, researchers found that a physically fit man suffering from high blood pressure was approximately 50 percent less likely to die than an unfit man with high blood pressure. These findings, study authors say, "confirm the protective role" of exercise. (The Official Anti-Aging Revolution, Klatz & Goldman, 2007, page 416).

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