


NIHCA
National Independent Health Club Association

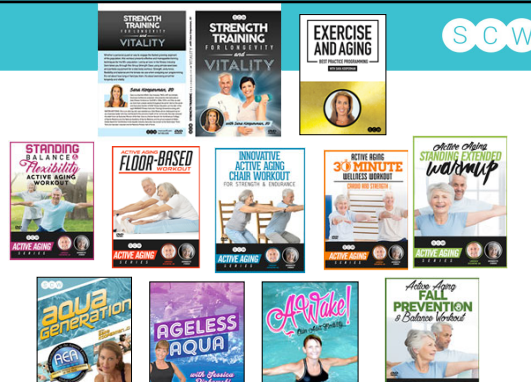
ACTIVE AGING
With Sara Kooperman
www.scwfit.com
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FALL CONFERENCE

NIHCA Fitness Conference & Exhibit Expo
Wednesday, September 22, 2021
8am - 3:00pm
Monticello Community Center—
Monticello, MN

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www.scwfit.com/seat SCW

SEAT
SEATED EXERCISE FOR ADVANCED TRAINING



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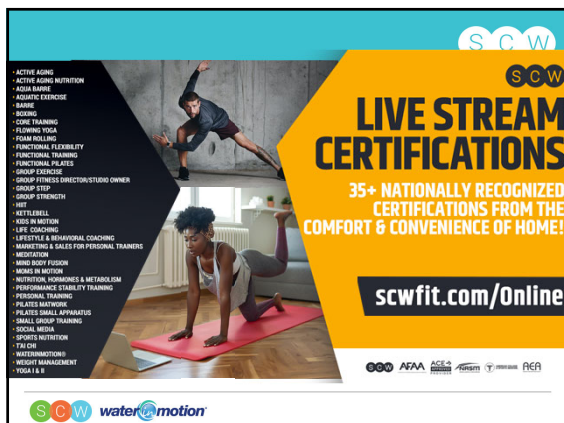
ACTIVE AGING SUMMIT

- 50 Sessions
- 28 Expert Presenters
- Up to 19 CECs
- All-Access Recordings

www.ActiveAgingSummit.com



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SCW LIVE STREAM CERTIFICATIONS

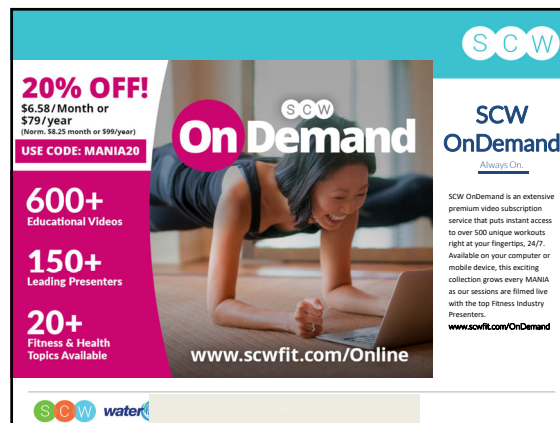
35+ NATIONALLY RECOGNIZED CERTIFICATIONS FROM THE COMFORT & CONVENIENCE OF HOME!

scwfit.com/Online

CEC VIDEO CATEGORIES:

- ACTIVE AGING
- ACTIVE AGING NUTRITION
- ADULT SWIM
- AQUATIC EXERCISE
- BARRE
- BOXING
- CLIMB TRAINING
- FLOWING YOGA
- FOAM ROLLING
- FUNCTIONAL FLEXIBILITY
- FUNCTIONAL TRAINING
- GROUP EXERCISE
- GROUP FITNESS INSTRUCTION/STUDIO OWNER
- GROUP STEP
- GROUP STRENGTH
- HITT
- KETTLEBELL
- KIDS IN MOTION
- LIFE COACHING
- LIFESTYLE & BEHAVIORAL COACHING
- MARSHALL & SALES FOR PERSONAL TRAINERS
- MEDITATION
- MIND BODY CONNECTION
- MOMS IN MOTION
- NUTRITION, NUTRITION & METABOLISM
- PERSONAL TRAINING
- PIRATES MATHEWS
- PIRATES SMALL APPARATUS
- SMALL GROUP TRAINING
- SOCIAL MEDIA
- SPORTS NUTRITION
- TRX OR OTHER
- WATERMARTINATIONS
- WATER MANAGEMENT
- YOGA I & II

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Online CEC Videos
Earn CECs at Home.

SCW CEC Online Video Courses allows you to gain continuing education credits (CECs) while broadening your fitness skills. Accepted by SCW, ACE, AFAA, NASM, ACSM, AEA and other organizations, these courses include 24/7 streaming videos (filmed live at conventions), power point presentations, exams and downloadable certificates of completion.

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- 750+ Aqua Bootcamp
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- Flowing Yoga
- Hot & Restless
- Aquatic Bootcamp

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www.scwfit.com/Webinars

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Webinars featuring various fitness professionals and topics, including:

- THINK TOURS
- Meet Kathy Smith & see survival in Action
- HOT
- SIT UP

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SCW CERTIFICATION SMASH

LIVE-STREAMING SEPT. 17-19

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MANIA® Is Back... LIVE!

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FITNESS PRO CONVENTION

MIDWEST
October 1-3, 2021

DALLAS
November 5-7, 2021

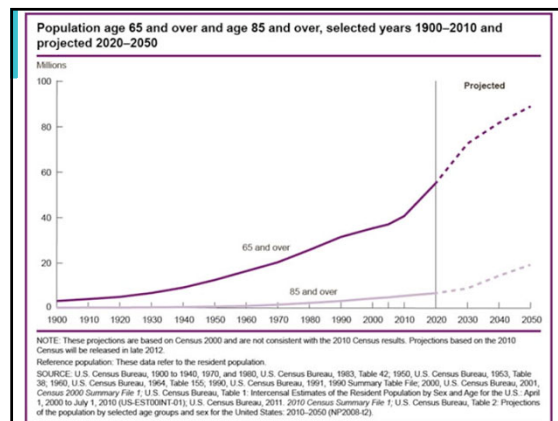
BOSTON
December 10-12

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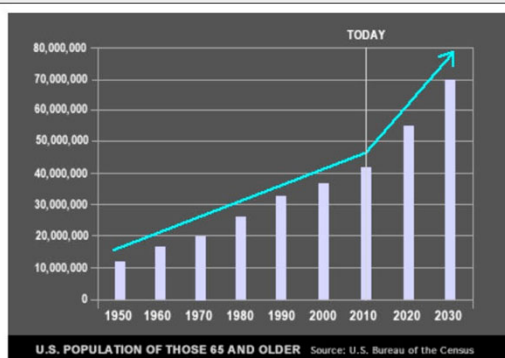
Aging Population Growth



- The number of persons 60 year old will increase 5 times in the next decade
- 1930 – 5.4% of population over 60 (7 million)
- 2015 – 33% were already over 50
- 2030 – 20% will be over 65 (UN Population Division)
- Median age has raised
 - 35.3 in 2000 to 37.2 in 2010, **NOW – 47.5**
 - 7 states have median age of 40 or older
 - Maine (42.7), Vermont (41.5), West Virginia (41.3), New Hampshire (41.1), Florida (40.7), Pennsylvania (40.1) and Connecticut (40.0)



Projected Acceleration of Population Aging



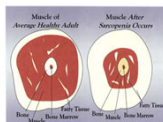
Prepare for this increase in older adults Prepare for the decrease in health care



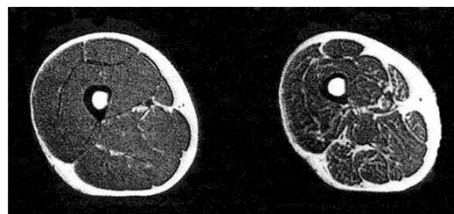
Sarcopenia



- Sarcopenia = Poverty of the Flesh
- Loss of :
 - Muscle mass
 - Strength
 - Power
 - Function
- 5-13% of all persons aged 60-70 years
- 11-50% of persons in their 80s
- Adults between the ages of 50-80 years old can lose up to eight times more muscle mass than is lost in the previous 30 years



Sarcopenia: Age related loss of Muscle



Age 25

Age 65



Causes of Sarcopenia



- 1. Reduction in Muscle Activation
 - Inactivity, Loss of motor neurons
 - Decreased insulin (growth/protein) factors
- 2. Oxidative damage by reactive oxygen species
 - ROS – overproduction attacks cells
- 3. Nutritional Factors
 - 25% decrease in food intake, less protein
 - Low vitamin D absorption (muscular and neuron function)



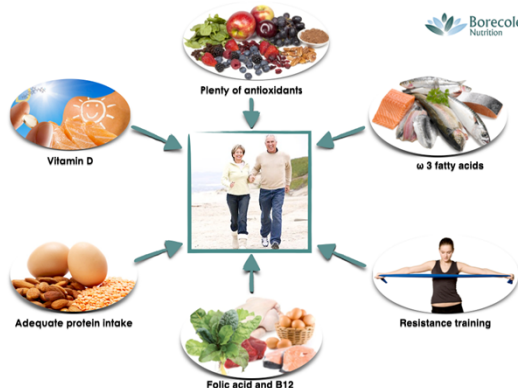
Combat Sarcopenia



- Activity!
- Type II Fast Twitch glycolic muscle fibers affected the most
 - perform fast twitch activating movements
- A diet rich in antioxidants – fruits & veggies
- Increase healthy protein intake



6 Winning strategies to preserve long term muscle health



Less is More



- Everything in Moderation including moderation
- Physical Activity Guidelines for Americans
 - At least 150 minutes of moderate-intensity aerobics exercise per week (2.5 hr/week 5 30 min. walks), OR
 - 75 minutes a week of vigorous-intensity aerobic physical activity, OR
 - Combination of both



General Recommendations



- Muscle-strengthening Activity
- Moderate or “high” intensity
- All major muscle groups
- 2 or more days a week
- Combination of cardio & strength



Hunter & colleagues 2013 Research



- 72 women (ages 60-72), no metabolic disorders, non-smokers, sedentary (exercising less than 1 time per week)
- 16 weeks
- Analyze : Cardio to Strength
- 1-1, 2-2, 3-3 (aerobic to weights)
- Strength Training
 - 2 sets 10 reps
 - 1.5-2 min rest in-between
 - Start 60% capacity increasing to 80% 1-RM



Conclusion to Hunter Study



- AEROBIC CAPACITY
 - All groups significantly increased their aerobic capacity
 - No statistical difference between 1-1, 2-2 and 3-3
- BODY COMPOSITION
 - All groups lost (approx. 3 lbs), reduced body fat (.5-2%), gained muscle (.4-.7kg)
 - No statistical difference between 1-1, 2-2 and 3-3



More is NOT better!



- MUSCULAR STRENGTH
 - Total Daily Energy Expenditure (TEE),
 - Non-Exercise Activity Thermogenesis (NEAT) &
 - Activity-Related Energy Expenditure (AEE)
 - **2-2 improved significantly in all the above!**
 - 1-1 & 3-3 did not and 3-3 even reduced NEAT
- FEELINGS OF FATIGUE/DEPRESSION
 - No significant difference
 - 3-3 Complained that the 6-day week was excessive, suggesting failed long-term adherence to this protocol



Osteoarthritis



- The most common form of arthritis
- Degenerative joint disease characterized by the breakdown of cartilage and its underlying bones
- Leads to joint pain and stiffness
- Before 45 – more men
- After 45 - more women
- 34% (12.4 million) individuals 65+
- Greatest cause – being overweight (25%)



MIRIAM NELSON STUDY



- USDA Human Nutrition Resource Center on Aging at Tufts University
- JAMA – Journal of American Medical Association



PROTOCOL



- 10 women over 40
- Full year study
- Overweight
- Individualized customized food plans
- 50% performed strength training twice a week
- Other followed prescribed diet



MIRIAM NELSON STUDY CONCLUSION



- Exercising showed great improvements in:
 - Fat loss
 - Muscle Increase
 - Body Size
 - Bone Density
 - Balance
 - Mood
 - Sleep
 - Pain Management
 - Cardiac capacity
 - Disease management



FAT / MUSCLE RATIO



- “Diet Only” lost an average of 13 lbs.
 - 2.2 lbs was lean muscle
 - 11.14 was fat
- “Exercisers” lost 13.2 lbs
 - Gained 1.4 lbs of lean tissue
 - Lost 14.6 lbs of fat
- “Exercisers” lost 44% more fat!



LOSE WEIGHT BY DIET ALONE



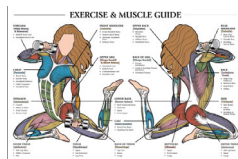
- 25-30% of weight loss isn't fat but ...
 - Lean tissue,
 - Muscle,
 - Bone and
 - Water
- U of Michigan:
 - Women can preserve muscle mass
 - Strength train
 - Prevent loss of bone and muscle



BODY SIZE



- “Exercising” women ended up smaller
 - Averaged 173% stronger
 - Thigh muscles
 - only 8% bigger
 - Fat loss compensated for the gain
 - Muscle is denser and more compressed than fat



BONE DENSITY



- Regained Bone Density
- Became 15-20 years younger
- Women who didn't exercise lost 2% bone mass
- Exercisers gained 1%



BALANCE



- 8% balance decline in women who did not strength train
 - Attributable to - 1 year older
- “Exercisers” 14% gain in balance
 - Enormous improvements in strength & muscle
 - Neurological improvements



MORE ACTIVE



- Non-exercising group became 25% less active over the year
- Exercisers increased activity by 27%



FRONTERA STUDY



- Tuft Center on Aging in 1980s
- **60-70 year olds**
- Revolutionized strength testing on older populations
 - Traditionally 30-40% capacity
 - **This study 80% capacity**
 - 12 weeks
 - 10-12% larger!
 - 100-175% stronger!



FIATRONE STUDY



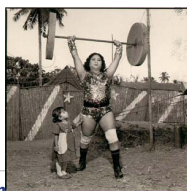
- Frail Elderly / Nursing home
- 6 women, 4 men (all had 2 chronic diseases/ heart/diabetes/ osteoporosis)
- Ages 86-96
- Same machines as 25 yr olds
- 3 times a week, 8 weeks
- Increased strength by 175%
- Walking, speed & balance – rose 48%
- 2 participants discarded canes!



STRONGER



- Nelson Study (40+) 173%
- Frontera Study (60-70) 100-175%
- Fiatrone (86-96) 175%



OVERWEIGHT



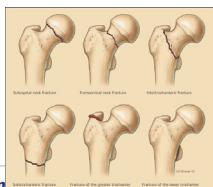
- 52% of women in their 50's are overweight
- More than 1/3 of women age 30-49 also weigh too much
- Numbers soar at menopause!



FALLS – BROKEN BONES



- 70 yr old woman faces 30% odds that she will break her hip if she lives 20 more years
- Each year 300,000 people end up in hospital with hip fractures because of osteoporosis



DEATH FROM OSTEOPOROSIS



- ½ of the victims NEVER go home again
- 1 in 5 (20%) die from complications within a year
- More women die from hip fractures than:
 - Breast cancer
 - Uterine cancer, and
 - Ovarian cancer COMBINED!



LOSE MUSCLE



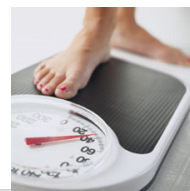
- Starting around 40 women lose ½ to 1/3 of a pound of muscle each year
- Gaining at least that much in body fat
- Women also lose a similar amount of bone
- Without exercise, by 80 yrs old, we'll only have about 1/3 the muscle we had at 40



PERIMENOPAUSE



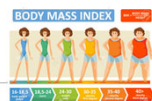
- Changes accelerate during early menopause
- Lose 5 lbs of muscle in just 5 yrs



POST MENOPAUSE



- University of Colorado Study
- Sedentary and active women 50-72 compared with women 21-35
- Older women who were not exercising showed decrease in BMR
- Older women who did exercise had **the same** BMR as average active women half their age



LOW CALORIE DIET



- Low calorie diet can cause your BMR to plummet by as much as 30%



DEPRESSION



- 3 out of 4 Americans suffer from depression at some time or another
- Exercise lifts depression
- Combats lethargy
- Makes weight loss easier
- Enhances mood
- Boosts self esteem and self-confidence
- Improves coping skills



NALIN SINGH, MD STUDY



- Tuft University
- 32 men and women who suffered from chronic depression
- Half strength trained, other health ed
- 12 weeks
- 14 out of 16 exercisers no longer depressed
- Only 6 of ed-only group improved
- **EXERCISE HAS THE SAME EFFECT AS ANTI-DEPRESSANTS!**



SLEEP



- 10 exercisers and 7 in ed-group in Dr. Singh's study reported sleep problems
- No-one in ed-group improved
- After 12 weeks, 6 of 10 exercises had no more sleep difficulty



EXERCISE & SLEEP



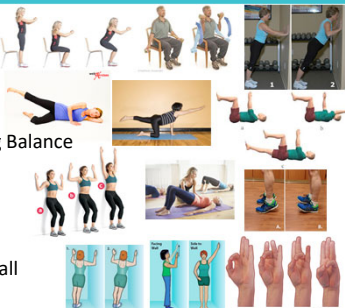
- People who exercise
 - Fall asleep more quickly
 - Sleep more deeply
 - Awaken less often in the middle of the night
 - Sleep longer
 - **Results comparable to the most widely prescribed sleeping pills on the market!**



Top 11 Exercises for Older Adults



- Squats to a Chair
- Bicep/Tricep
- Wall Push-Ups
- Side-Leg Lifts
- Opposite Arm & Leg Balance
- Dead Bugs
- Bridges
- Toe & Heel Lifts
- Wall Angels
- Finger walks Up a wall
- Fingers/Hands



Strength Training Helps



- Arthritis
 - Reduces pain and stiffness, increases strength and flexibility.
- Diabetes
 - Improves glycemic control
- Osteoporosis
 - Builds bone density & reduces risk of falls
- Heart Disease
 - Reduces cardiovascular risk by improving lipid profile
- Back Pain
 - Strengthens back and ab muscles to reduce stress on the spine
- Obesity
 - Increases metabolism, burns more calories
 - Helps with long-term weight control



Center for Disease Control



- Free Downloadable book for clients:
 - Strength Training for Older Adults : Growing Stronger
- http://www.cdc.gov/physicalactivity/downloads/growing_stronger.pdf - Tufts 2002



Resistance-Training Considerations



- FREQUENCY
- DURATION
- EXERCISE SELECTION
- SETS
- INTENSITY
- REPETITIONS
- PROGRESSION



ACSM Guide for Senior Exercise

SCW

- Frequency 2-4 times per week of strength training (48 hrs between training sessions)
- Avoid lengthy training sessions – risk of extreme fatigue (20-40 min . 30 min average)
- Multi-joint exercises recommended (bench press, leg press – not bicep curls alone)
- Recommend machines vs free weights because of skill levels (can progress)
 - Skill issues and safety factors



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6 Areas to Focus on

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- Back – latissimus dorsi, erector muscles
- Chest - pectoral
- Shoulders – deltoid, rotator cuff, scapular stabilizers & trapezius
- Arms – biceps, triceps & forearms
- Abdomen – rectus abdominus, oblique, intercostals
- Legs – hip (gluteal) thigh (quads) hamstring

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Protocols

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- 1-2 exercises per muscle group is adequate
- Multi-joint exercises employ more than 1 muscle
- Perform multi-joint exercises before uni-joint exercises
- Larger muscle groups worked before smaller
- Perform 1-3 sets (2 recommended to avoid excess fatigue + 2-3 min rest between



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Intensity

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- Amount of weight
- No more than 80% up to 85% - no max testing
- 65-75% Training adequate in older adults
- As intensity increases, repetitions decline
 - 60% capacity = 16-20 Repetitions
 - 65% = 14-15 reps
 - 70% = 12-13 reps
 - 75% = 10-11 reps
 - 80% = 8-9 reps
 - 85% = 6-7 reps



<https://www.acsm.org/docs/current-comments/resistancetrainingandtheoa.pdf>

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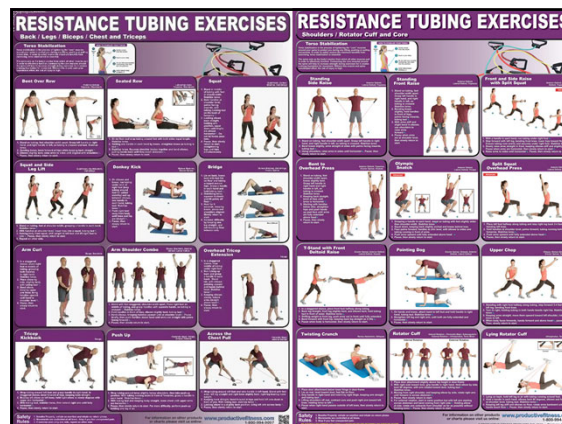
Tubing Exercises


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- Multi-Joint
- Low risk of over-doing
- Creativity
- Risk of improper form
- Portability
- Total Body
- Affordable
- Convenient




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