



Graceful Aging

Richard A. Bereza, M.D.

May 31, 2006

We Are All Aging



- Can't stop the "sands of time"
- Physical decline including beauty
- Mental sharpness
- Appearance? Weight gain?
- Less resilience to stress
- Aches and pains – parts wearing out

What We Can't Do



- Can't stop time
- Can't stop physiology (cellular function)
- Can't alter genetics (Mom & Pop)
- We can't deny it's happening

Goal of Graceful Aging



- Live a productive life while doing everything in your control to delay age-related disease.
 - It may help to extend your life along the way

Good News: It's Working

- Child born 1900 – Life expectancy 47 years
- Child born 2000 – Life expectancy 77 years
- More of us 2010
 - 25% >55 years
 - 50% >35 years

Why? Lots of Reasons

- Better health care
- Sanitation problem solved
- Better food, supplements
- Learning about the importance of physical activity
- Manage stress better
- More time to take care of ourselves

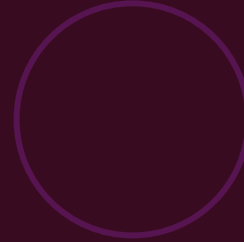
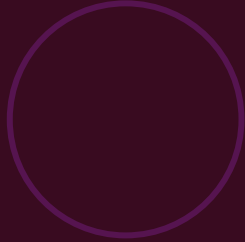
What's the Problem Then?

- How do we get going?
- We have to care – MOTIVATION
- Details
- How do we keep going?
 - Sometimes the orthopedist can help that

Old Can Be Good



- Works with wine, cheese and trees
- Wisdom of the years and experience
- Genetically – must be a reason to keep us around



What are the details of this process?

Think About This First



- 70% of our health has to do with how we live our lives
 - The medical system is not helping us with this

Aging – What Happens?

Bad News

- Decreased cardiac function
 - 60 year-old has 80% of a 20 year-old
- Decreased lung function
 - Less elastic
- Blood vessels
 - Less elastic = increased resistance
- Kidneys
 - Decreased blood flow
 - Can't concentrate urine
 - Lose water – must drink more

More Bad News

- Ligaments
 - More cross-links – stiffer and thicker
 - Less water content
 - Less lubricant protein
- Less activity = Less loading to bones
 - Disuse atrophy
 - Loss of bone density – structure
 - Men 1/2 to 3/4% per year after 40
 - Women 1 1/2 to 2% per year; 3% after menopause

More Bad News



- Joints/Articular cartilage
 - Less lubrication to joints
 - Joint fluid more dilute
 - Soften, fissuring, breakdown
 - Can't tolerate impact, especially repetitive

Aging – Good News



**Most of the above can be mitigated or
reversed with regular EXERCISE**

Deterioration Is Not Inevitable

- It is more a result of:
 - A sedentary lifestyle
 - Long-standing disuse

Injury Is Due To...

- Weakness, low endurance
- Lack of flexibility
- Loss of bone strength, fatigue
- Poor balance
- Overweight
- Nutrition imbalance
- Medication side effects

Example: Coumadin weakens bones which increases the risk of fractures, especially in women

Specifics To Reverse The Above Issues

- Weakness
 - Regular progressive muscle training can totally reverse “age-related” decline in muscle mass and strength into the 8th decade.

Flexibility – Stretching



- Breaking the cross-links
- Increase the resting length of muscle
- Improve posture
- Balance the joints

Bone Strength



- Regular exercise (stimulus) increases:
 - Bone thickness (mass)
 - Calcium content
 - Strength of bone
- Start out gradually

Balance



- Exercise improves:
 - Dexterity
 - Proprioception (position sense)
- Direct correlation to incidence of falls
 - Foot speed
- Increases blood flow to brain
 - Alertness

Cardiovascular



- 20 – 30 minutes of increased heart rate and breathing
- 3 – 4 times per week

Overweight



- Exercise is essential for weight loss
- Increase muscle mass – burns more calories
- Less appetite drive, more relaxed
- Exercise combats mild depression
 - “Feel better”
 - Self pride

Nutritional Factors

- Decreased tendency for diabetes, high blood pressure, etc.
- Proper eating with exercise
 - More consistent blood sugar
- Correct eating
 - Better building blocks for making good joints and structure
- Cyclic loading of joints
 - Repetitive moves, fluid and nutrients into spaces in cartilage, bone and connective tissue

Specific Problems



- Low back pain
- Rotator cuff tendonopathy
- “Tennis elbow”
- Bursitis – hip or knee
- Stiff, painful joints
- Achilles tendonitis, plantar fasciitis

**All can be prevented or helped by
strengthening and stretching**

Specific Exercise



- Must tailor to your situation
 - Where are you starting from?
- Everyday activity counts, too
- Walking for distance (or time) is basic
- Swimming is great – not for all though

Specific Exercise (Continued)

- Biking, stationary or rolling
- Classes – better interest and routine
 - Use a trainer or leader
- Weight lifting – all sizes build muscle
- Stretch with all of this
 - Yoga, store front shops

Goal



- Build a year-long steady program
 - 20 – 30 minutes elevated heart rate, 3 times per week
 - Mix up different types of activity
 - Commit – **You Yourself Have to Care**

Warning – Disclaimer

Consult your physician before starting a...

- Not necessarily so for most
- Use common sense, read, consult
- Take interest
- If you do have serious medical problems – consult M.D.

A regular exercise program will help everyone!

When All Else Fails



**What can the orthopedist do to
keep you going, or start?**

Conservative Measures



- Education – what we talked about
- Anti-inflammatories
 - NSAIDS – COX1, COX2
 - Aspirin – willow bark – known 3,000 years
 - Motrin, Naprosyn, etc.

Conservative Measures (Continued)

- Cortisone Injections
 - With stretching
 - Many uses
 - Temporary effect
- Viscosupplementation
 - Synvisc, Hyalgen, Supartz, etc.
 - Replenishes the lost protein lubricant due to injury or aging
 - Used best in mild cases
 - G II – III arthritis (I-D)

Dietary Supplements



- Glucosamine and chondroitin sulfate
 - Helps lubricate, anti-inflammatory
- Selenium

Selenium Study 2005

- For each .1ppm increase in selenium level osteoarthritis incidence decreased by 15%
- Normal level is .75ppm
- Selenium found in whole grains, shell fish and nuts
- Also found in vitamin supplements and ...supplements

Glucosamine and Chondroitin

- NIH study positive results
 - Works best in the most severe cases of arthritis
 - 30% excellent
 - 30% fair
 - 30% too bad to help
- Compared to celebrex, celebrex better in all types

What I Recommend

- Multiple men's vitamins
- Folic acid 400mg
- Glucosamine and chondroitin
- Vitamin D 400IU
- Selenium
- Turmeric
- Aspirin – one 300mg every 2 to 3 days

Dietary Effects



- Phytochemicals
 - From plants
 - “Phase 2 inducers” new information
 - ...plants, broccoli and cauliflower
- Olive Oil
 - Extra virgin
 - Has Ibuprofen – Motrin effect “Nature Magazine 2005”
- Omega 3 Fatty Acids vs. Omega 6 Fatty Acids
 - Colorful foods, blueberries, cherries and fruit nuts

Orthopaedic Surgery Intervention

**Orthopedists do the largest variety
and number of surgeries of all**

Arthroscopic Surgery



- Shoulders

- Remove spurs
- Repair rotator cuff

- Knees

- With joint repairing
- Can take care of mechanical problems, torn cartilage, loose bodies
- Incidental smoothing

Joint Replacement



- Partial
 - For unique cases in younger people
- Total
 - Knees, hips, shoulders

Total Joint Replacement

- Allows continued sustained activity and exercise
- Combats all the “aging issues”
- Comfort at rest and play
- Increased endurance
- Leg alignment and length
- Balance – looks better while walking
- Allows increase in calorie consumption

Secondary Gains – Patients Tell Us About Regaining Lifestyle

- Sports
- Travel
- Gardening, hobbies, crafts
- Grandchildren
- “Give back” issues
 - Volunteering, church, Habitat for Humanity, etc.

Stay active

New Approaches



- Better devices
 - Better wear, more stable
- Better surgical approaches
 - Minimally invasive
 - Spares muscle from being cut
 - Easier rehab
 - Smaller scar
 - 700,000 a year

Limitations



- No impact loading – wear
- No contact – i.e. softball
- Slip and falls can happen
 - Fracture
 - Dislocation

Rehabilitation



- Starts before surgery
- Treat it as normal as possible
- Full weight bearing immediately
- Push range of motion day 1

Finally – Secrets of Long Life

- National Geographic – November 2005
- 3 Hot Spots of Long Life
 - Sardinia, Italy
 - Okinawa, Japan
 - Loma Linda, California

Take Home



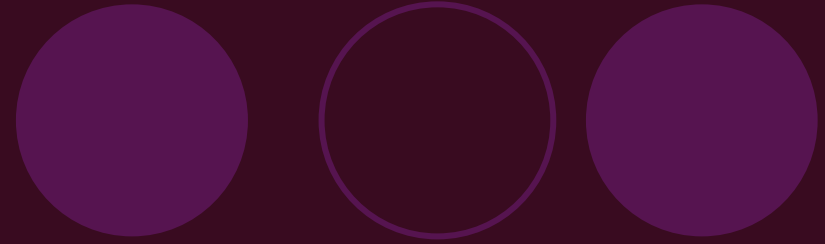
- Don't smoke
- Put family first
 - Keep socially engaged
- Diet
 - Eat less
 - Lots of nuts and beans
 - More fish, less meat
 - Diet high in Omega 3 foods
 - Ginseng, tumeric, red wine
 - Eat low on the food chain
 - No fast, highly prepared foods

More to Take Home



- Exercise
 - STAY ACTIVE
- Keep purpose and make plans for the future

Check This Out



- My Real age website
- www.realage.com
 - Tests
 - Tips
 - Weekly e-mail
 - Tip of the day
 - Free

Postscript



- Health care facts
 - USA \$6,000 per capita
 - Twice the average of others
 - Second lowest healthy life expectancy
 - (Total life minus years of illness)



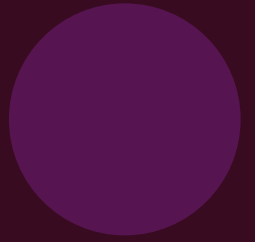
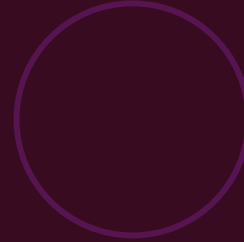
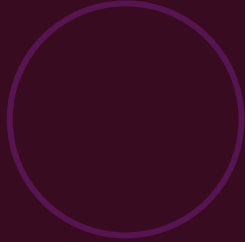
- Doctor Visits

- More likely to talk about numbers and what pill to give
- Lifestyle issues not addressed well

- Direct to Consumer

- USA and New Zealand
- Works but at a high cost

- Lots of work to do on a system that will last and work



Thank you for your interest!