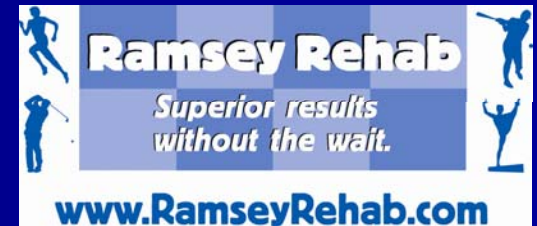


# Function - Based Lumbar Rehabilitation Program



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We're going to Offer YOU  
a few Cookies...





...Or Pearls of Knowledge.



Today, we hope to take some of the guesswork out of dealing with back pain.



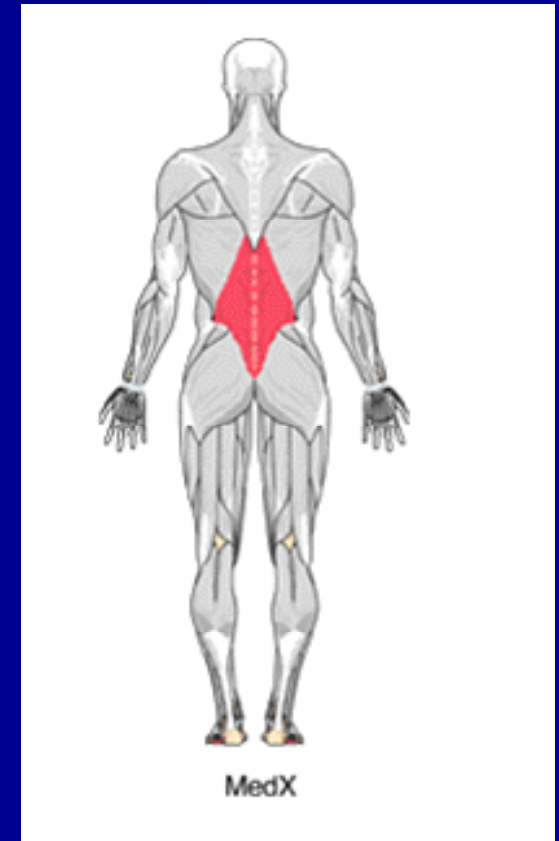
# Back Pain

- A symptom...many conditions can cause some level of this symptom
- 90% Americans will have some degree of back pain in their lives
- **GOOD NEWS!!**  
A majority of back conditions are effectively treated with exercise and self-management

# Types of Back Injuries

## ■ Strain

- Muscle, Ligament, Tendon
- Usually “acute”
- Due to overuse, improper use, or trauma
- #5 reason for all MD visits
- Recurrence of pain (60-80%) if proper actions are not taken to prevent this



# Types of Back Injuries

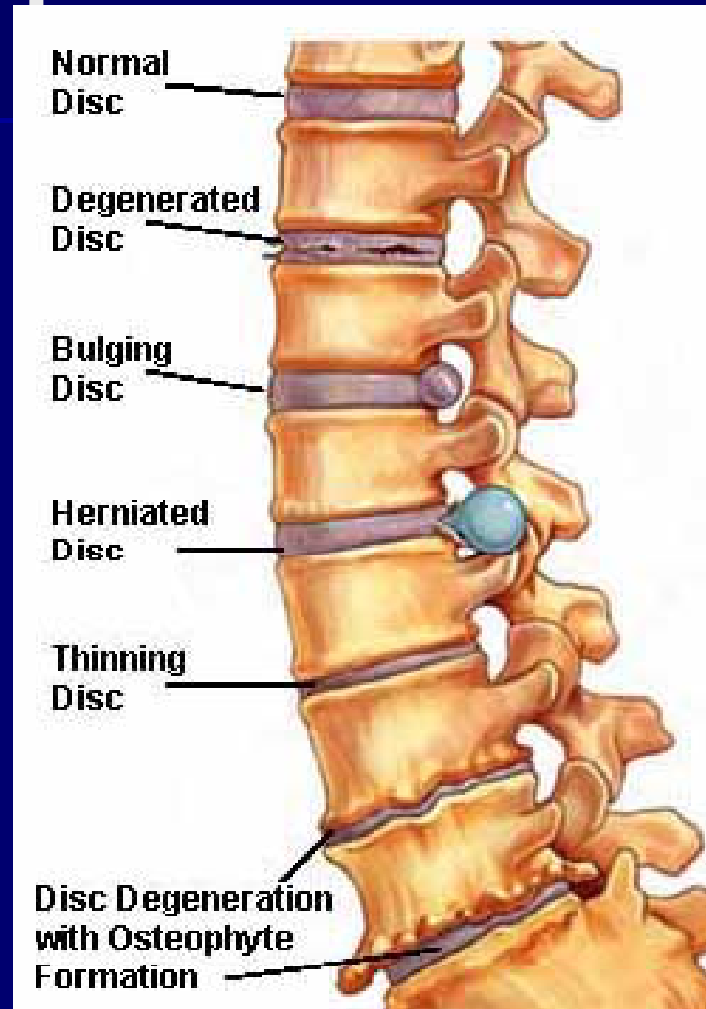
## Disc Injuries

- Degenerative Disc Disease
  - Natural part of aging “wear and tear”
  - Exercise and proper lifestyle management will reduce symptoms from this process
- Disc Protrusion
  - Central portion of disc bulges out of central cavity and pushes against a nerve root
  - Bulging disc found in 1/3 of adults older than 20
  - 2-3% herniate and produce symptoms of nerve impingement
  - Sciatica is an example of nerve root impingement

# Types of Back Injuries

- Degenerative Joint Disease
  - AKA Osteoarthritis
  - Breakdown of cartilage, the cushion between the bones of the joints
  - Causes bones under the cartilage to rub together, creating pain, swelling and loss of motion of the joint
- Vertebral Fractures
  - Osteoporosis or trauma

# Examples of Disc Problems



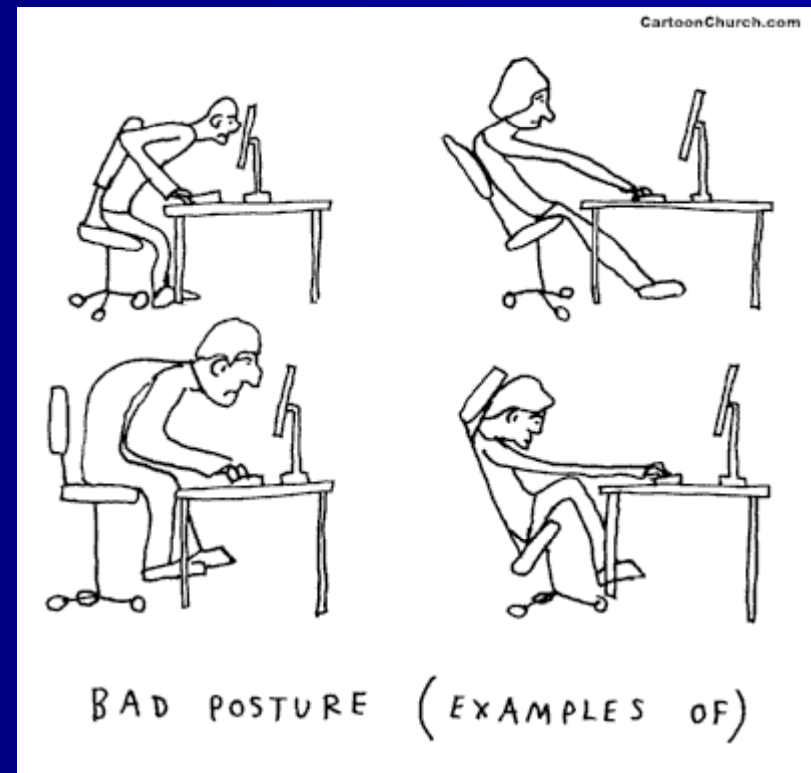
# Types of Back Injuries

- Spinal Stenosis
  - Narrowing of the spinal canal
  - Caused by DDD, OA, or inflammation of ligaments within the spinal canal
  - Can squeeze the spinal cord and/or nerves, resulting in lower back and leg pain



# POSTURE! POSTURE! POSTURE! POSTURE!

- Other causes
  - Excess weight
  - Lack of regular exercise, poor core strength
  - High heels
  - Sleeping on a mattress that is too soft
  - Poor sitting postures



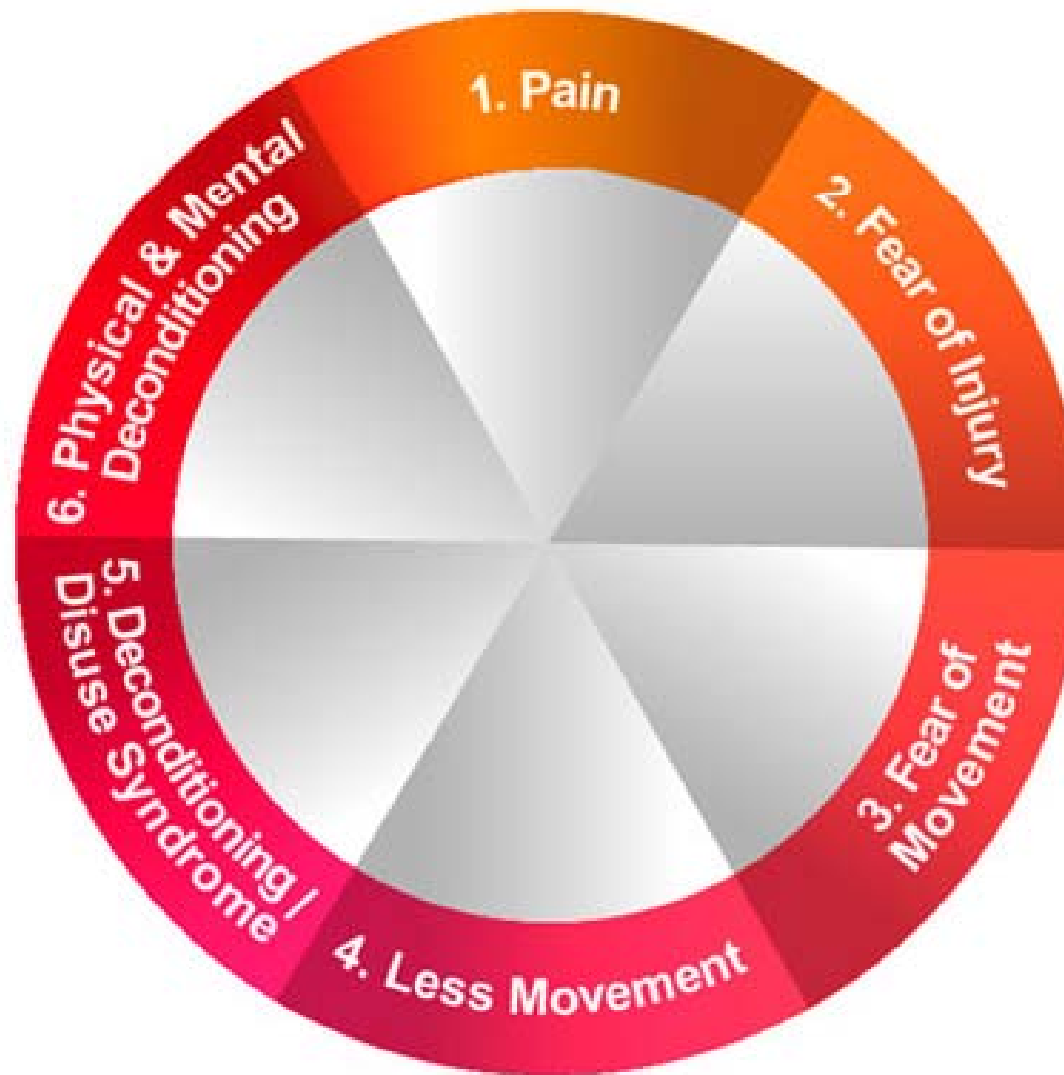
# Overall Treatment Goals

- Empower the patient so that each individual manages **his or her own** healing process
- Emphasis is on improving **function** rather than focusing on pain
- “Although pain cannot be ignored and certainly needs to be continually and carefully monitored, it should not be the primary focus of treatment. A 100% pain-free outcome is an unrealistic expectation in most instances.” Porterfield and DeRosa

# Treatment Goals – Wk 1

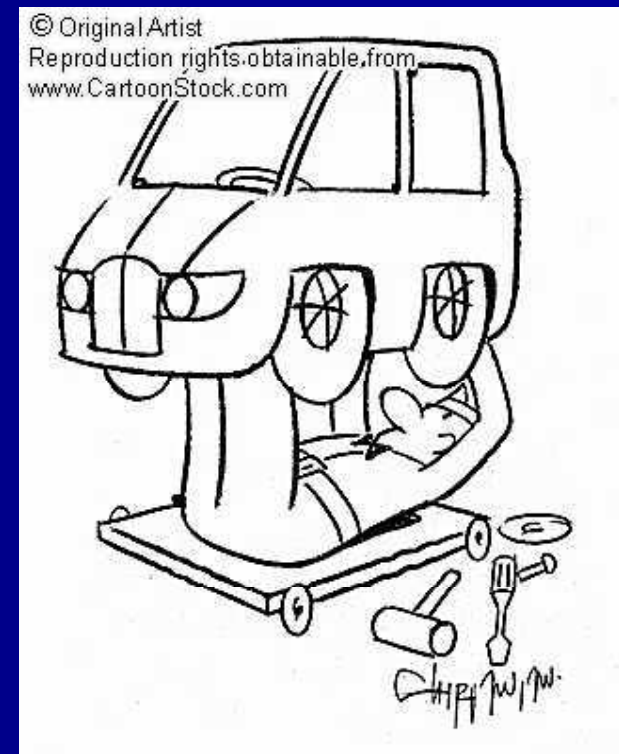
- Optimize the healing environment
  - Take control of your condition
  - Recognize pain patterns
  - Healing can require 12-16 weeks, but daily improvements in intensity, duration, or frequency will be noticed
  - The most successful patients are those who are aware of this healing process, understand it, and are able to predict changes within themselves

## The Chronic Pain Cycle



# Treatment Goals – Wk 1

- Biomechanics in daily living
  - Learn how to maximize your activity within new limits
  - Maintain symmetric, upright posture
    - 4 – Point Posture
  - Lift objects close to body
  - Lift symmetrically
  - Use moderate lifting speed



**LIFTING - 3**

**Low Shelf**

Squat down and bring item close to lift.

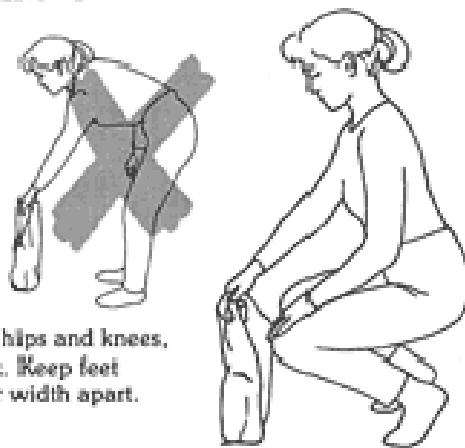


Copyright 1981 1995

**MOVEMENT - 1**

**Bending**

Bend at hips and knees,  
not back. Keep feet  
shoulder width apart.



Copyright 1981 1995

**ADL - 16**

**Laundry - Unloading Dryer**



Squat down  
to reach into clothes dryer.

Small items can be placed  
in a large zippered mesh bag  
and pulled out using a reacher.

Copyright 1981 1995

# Treatment Goals – Wk 1

- Staying in bed more than 1-2 days can make the problem worse
- Health of the discs are maintained by loading and unloading...so constant pressure from unchanged sitting, lying, or standing positions interrupts the transfer of fluid through the spine and ultimately slows healing



# Treatment Goals – Wk 1

.....however, ample **sleep** on a comfortable surface is essential.



# Treatment Goals – Wk 1

- Modalities

- Goal is to reduce pain, inflammation, and muscle spasms accompanying injury
- Symptom relief in the acute phase
- Manual techniques are shown to improve results when combined with exercise therapy
- Heat, Cold, Electrical stimulation

- Pool Therapy

- 94 deg, decreases pain perception
- Self-traction in deep water
- Buoyancy helps promote earlier, pain-free movement

# Treatment Goals – Wk 2

- Restore relation between injured and non-injured tissue
  - Daily Posture and Habits
    - Patient is responsible! PT 3x/week for 45 mins = 2% of your time awake and going about your life...it is unrealistic that PT alone will heal your low back disorder!
  - Movement
    - Walking is the simplest and most likely the best exercise for the lower back



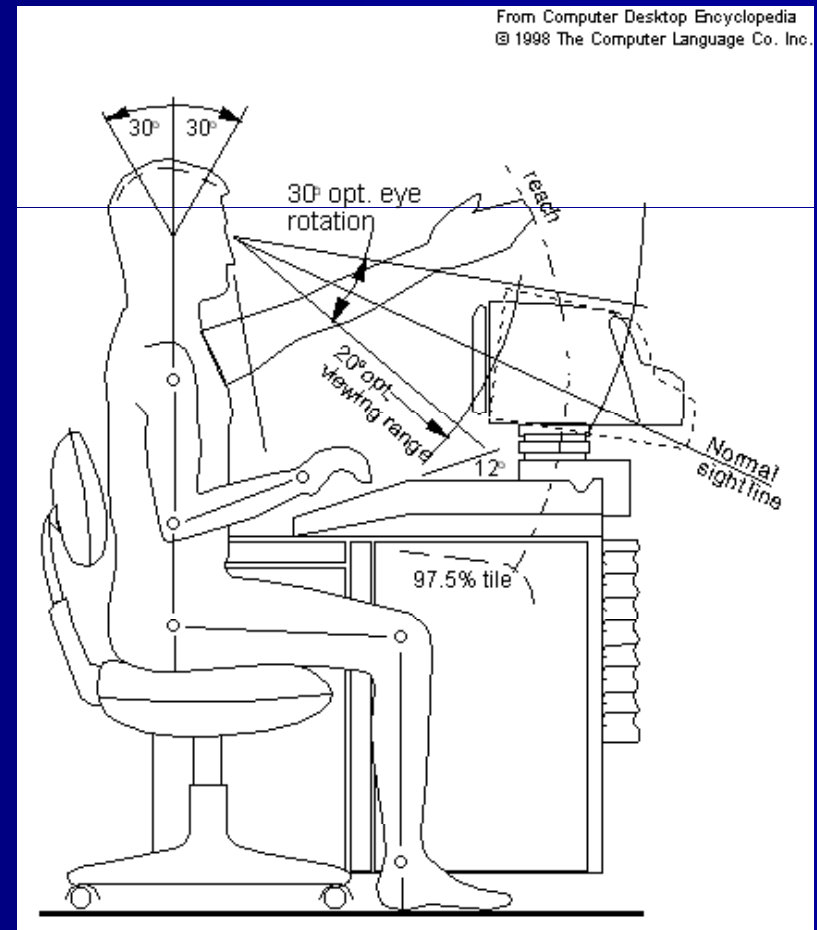
# Treatment Goals – Wk 2

- Flexibility Training
  - Lower extremity stretching
  - Back stretching
- Pool Therapy
  - Continued progression of pool program for increased flexibility
  - Buoyancy helps assist in stretching and pain-free strengthening

# Treatment Goals – Wk 2

## Ergonomics:

- The science of fitting the job to the worker and adapting the work environment to the needs of humans.
- Promote health and safety and to optimize productivity.
- Ergonomics is vitally important throughout your day
  - Work
  - Home
  - Kids
  - Sports



# Treatment Goals – Wk 3

- Prevent excessive stress on injured tissue
  - Incorporate mild lumbar strengthening without increase in symptoms
  - Postural / Core Stabilization
    - Exercise Ball Training
    - Sitting Core Stability
    - Active Stability
    - Mostability
    - Work Simulation Activities

# Treatment Goals – Wk 3

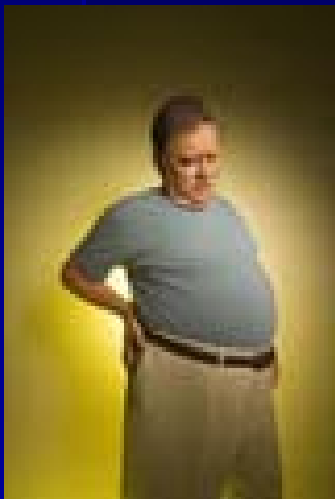
## ■ Pool therapy

- Progressively more challenging core exercises using water as resistance
- Constant challenge to the body and core muscles by balancing in the water



# Treatment Goals – Wk 4

- Incorporate aerobic rehabilitation program without exacerbation of symptoms
  - Weight Loss / Weight Management Education
    - Weight Loss for Health – Men 40 in.; Females 35 in.
    - Excess weight contributes to back pain
    - Extra weight on back increases tendency of strain
    - Lack of exercise contributes to back pain
    - Exercise, diet and weight loss to reduce back pain



# Treatment Goals – Wk 4

- Aerobic Rehabilitation (cont.)
  - Transitions Lifestyle System (implemented at Ramsey)
    - ACT, Dec 2005: 'Transitions 12-Week program resulted in twice the amount of weight loss and triple the amount of waist-circumference loss compared to the Atkins, Ornish, Weight Watchers and Zone diets'
    - Additional studies in progress
  - Bike / Treadmill / Elliptical
    - Cardiovascular Exercise to increase metabolic rate
    - CV Workouts in a.m. to increase BMR 18 hours
    - Rote exercise for 20-30 minutes per day (**ref**)

# Treatment Goals – Wk 4

## ■ Lifting Biomechanics (revisited to fine-tune)



- Focus on full-body approach to lifting
- Use legs and keep objects close
- Contract abdominal muscles before lifting
- No twisting at the waist
- Pace yourself and set limits
- Lifting is best between knee and shoulder height
- Maintain a wide base of support
- Get help for the big stuff!

# Treatment Goals – Wk 4

- Step / Lunge Matrix
  - Transform Knowledge into Function
    - Gary Gray Chain Reaction Explosion
    - Full-Body Exercise for Full-Body Function
    - Create a Functional Environment
      - Work
      - Sport
      - Daily Life
      - Things patient ENJOYS doing

# Treatment Goals – Wk 5

- Combine aerobic and strengthening programs without symptoms with subsequent discharge from physical therapy to a solid home exercise program
  - Weight Loss / Weight Management Education
  - Therapy Ball Training
  - BOSU core stability training
  - Medicine ball training
  - VERSAPULLEY
  - Fitter
  - Pilates



# Functional Testing for Objectivity

## ■ Oswestry Low Back Pain Scale

– A questionnaire that gives us information as to how back pain affects your ability to manage in everyday life.

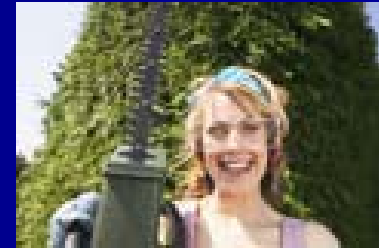
- Evaluation 22.1
- Re-evaluation 30 days later 16.4
- Discharge 2.5

\* Based on 223 patients with LBP treated between January and July 2007

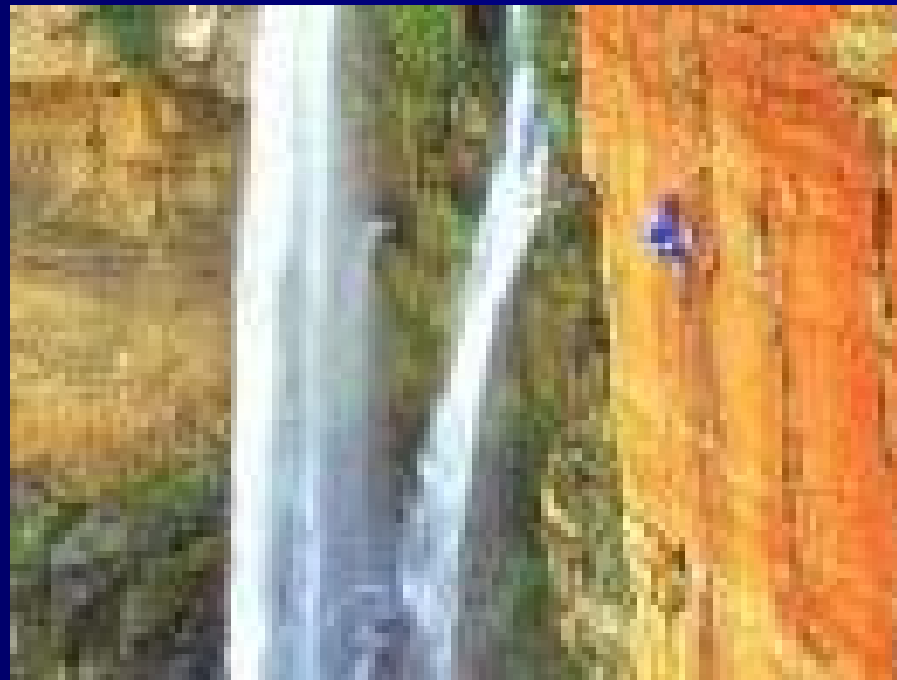
**At Ramsey, let us help you  
manage a healthier back...**



...so you can  
do what you enjoy!



**or maybe this is your gig:**



**THANK YOU!**

There...your seeds.



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