

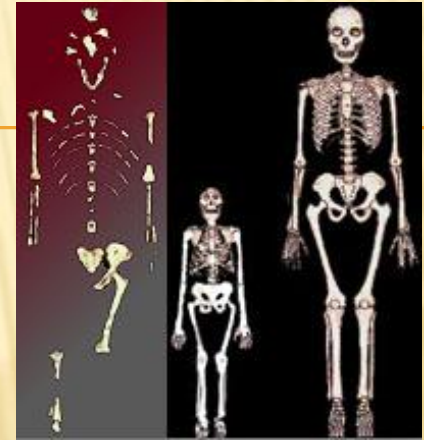
**Other than needing an old army boot for a butt...What's up with riding those insanely long Brevetts?**

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# WE'RE DESIGNED TO BE LEAN, MEAN TRAVELING MACHINES!

4.4 MYA emergence of a unique bipedal!

- \* novel adaptations for long distance endurance activity
- \* Sweating/respiration/novel protective mechanisms
- \* Running down dinner and the Pony express



	7 Marathons	RUSA Members ship	ULTRA Study	Badwater/ Death Valley	Spartathon/ Greece
Distance	42.2km (26.2 mi)		>50 km or longer	217 km (135 mi)	246 km (152mi)
N			1212	663M : 183 F	1157M:141F
Largest age grp or average age	18-39	<b>44</b>	42.3(18-81)	45-49M: 45-49F	45-49M: 50-54F
Fastest Male	28.9	--		42.4	39.7
Fastest Female	29.8	--		42.3	44.6

# INTERESTING BITS ABOUT BIG ULTRA PARTICIPANTS

1. Median time to first ultra : 7 years of running
2. Older racers tend to complete more events than younger folks
3. Annual training distance doesn't decrease with age

# THAT ‘SADDLE HARDENING BIT’ .....

“Base” is  
less about  
conditioning  
and more  
about  
building a  
riding history

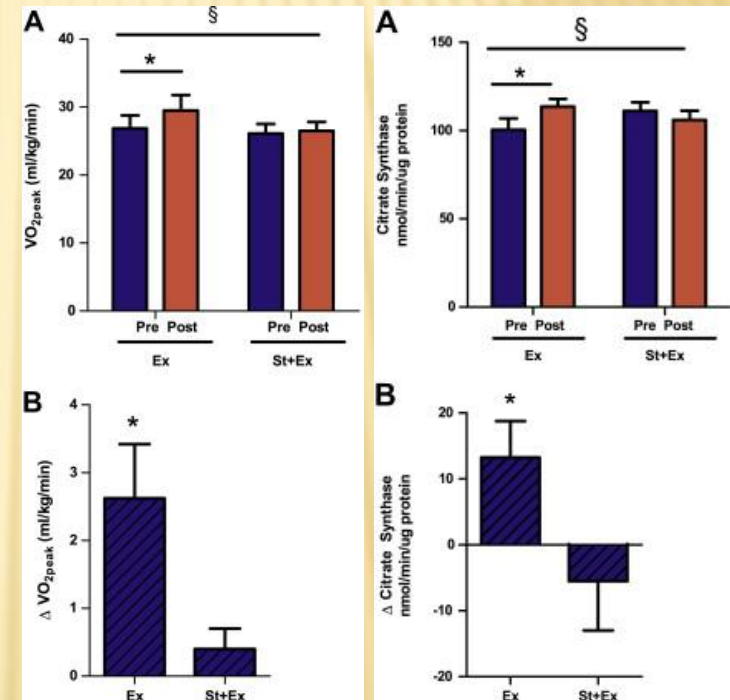
## BOULDER - LOUISVILLE - NIWOT

<b>201km</b>	<b>Boulder Estes Boomerang</b> - Flat-rolling hills with a midsection 25-mile climb. Organizer: <a href="#">Michelle Grainger</a> <a href="#">RUSA Listing</a> <a href="#">Route</a> <a href="#">Map</a> Start: <a href="#">28th and Iris, Boulder</a>
BOULDER	
<b>101km</b>	<b>Boulder Loves Raymond</b> - Flat to rolling hills with one 12-mile climb. Organizer: <a href="#">Michelle Grainger</a> <a href="#">RUSA Listing</a> Start: <a href="#">28th and Iris, Boulder</a>
BOULDER	
<b>101km</b>	<b>Brainard Lake Breeze</b> - A summit at Brainard Lake at 10,000 feet by way of the "SuperJames" climb through James Canyon. Organizer: <a href="#">John Lee Ellis</a> <a href="#">RUSA Listing</a> <a href="#">Map and Route Sheet</a> Contact Organizer. Start: <a href="#">Niwot Rd. &amp; 79th St., Niwot</a>
NIWOT	
<b>206km</b>	<b>Carter Lake Cakewalk</b> - Skirting the foothills with visits to Eldorado Springs, Rabbit Mountain, Carter Lake, and Buckhorn! Organizer: <a href="#">John Lee Ellis</a> <a href="#">RUSA Listing</a> <a href="#">Map</a> <a href="#">Route</a> Start: <a href="#">Dillon at McCaslin Blvd., Louisville</a>
LOUISVILLE	
<b>101km</b>	<b>Carter Lake Casual</b> - Flat to rolling hills and three short switchbacks to Carter Lake Marina. Organizer: <a href="#">Michelle Grainger</a> <a href="#">RUSA Listing</a> <a href="#">Route</a> <a href="#">Map</a> Start: <a href="#">28th and Iris, Boulder</a>
BOULDER	
<b>201km</b>	<b>Central City Cutoff</b> - A challenging climbfest via Lookout Mtn., Central City, and the Peak-to-Peak Hwy. Organizer: <a href="#">John Lee Ellis</a> <a href="#">RUSA Listing</a> <a href="#">Map</a> <a href="#">Route</a> Start: [LSVL] <a href="#">Dillon at McCaslin Blvd., Louisville</a>
LOUISVILLE	
<b>102km</b>	<b>Cherryvale Cruise</b> - Easy flat route through farmlands. Organizer: <a href="#">Ted Warm</a> <a href="#">RUSA Listing</a> <a href="#">Route</a> <a href="#">Map</a> Start: <a href="#">55th and Arapahoe, Boulder</a>
BOULDER	
<b>219km</b>	<b>Coal Creek Calypso</b> - Extended jaunt on the Peak-to-Peak Highway after climbing Coal Creek Canyon and then descending Big Thompson! Organizer: <a href="#">John Lee Ellis</a> <a href="#">RUSA Listing</a> <a href="#">Map</a> <a href="#">Route</a> Start: <a href="#">Dillon at McCaslin Blvd., Louisville</a>
LOUISVILLE	
<b>340km</b>	<b>Coffee Cup Classic</b> - Classic out-and-back that climbs from Superior to Copper Mountain Ski Area -- with many possible stops along the way for coffee and pastry. Ride ascends Loveland Pass (11,990') twice and a pre-dawn start is advised! Organizer: <a href="#">Catherine Shenk</a> <a href="#">RUSA Listing</a> <a href="#">Map</a> <a href="#">Route</a> Start: [LSVL] <a href="#">Dillon at McCaslin Blvd., Louisville</a>
LOUISVILLE	
<b>307km</b>	<b>Continental Double Cross</b> - A scenic climbing challenge, crossing the Continental Divide twice, in a grand loop from Boulder's back door. Mountain bike or cross-bike recommended. Organizer: <a href="#">None. Adopt a route.</a> <a href="#">RUSA Listing</a> <a href="#">Map and Route Sheet</a> Contact Organizer. Start: <a href="#">Baseline at</a>
BOULDER	

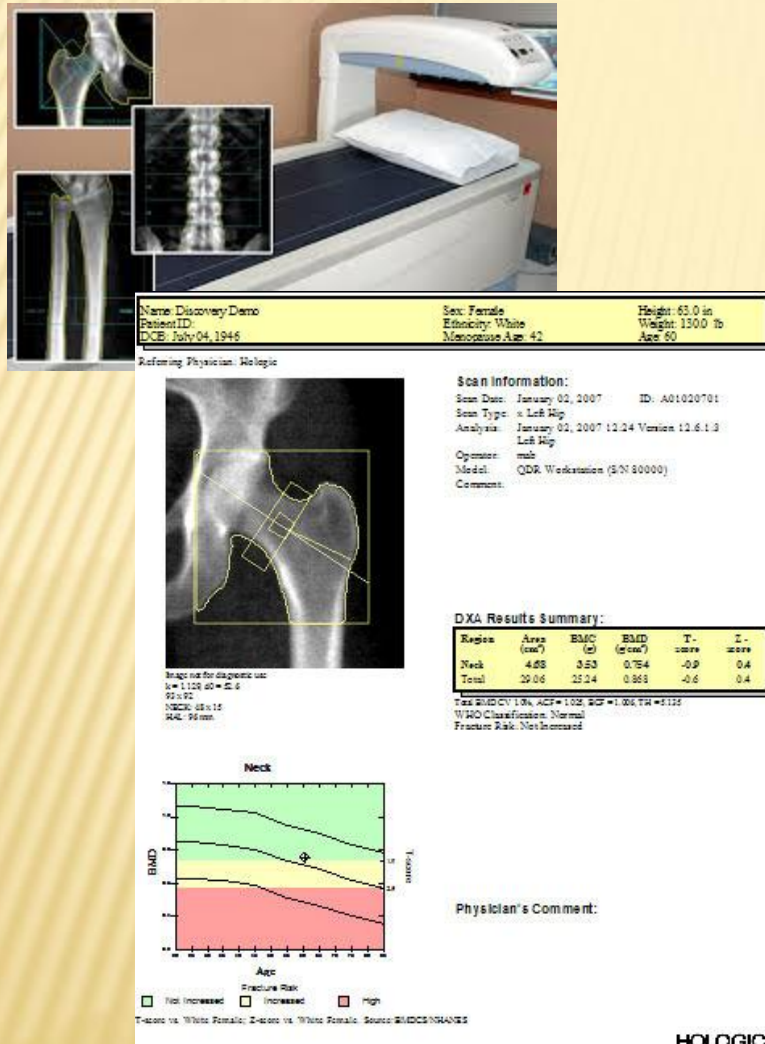


# SEEK HELPFUL HEALTH INFORMATION

- ✗ Hydrochlorothiazide (HTZ)
- ✗ Exercise contraindications
- ✗ Health record gottchas....



# BE PROACTIVE ABOUT TAKING CARE OF YOUR BODY: BONE HEALTH



Recruiting cyclists (age 18-40)

\*Above casual level riding

Osteopenia and Osteoporosis  
 (thin and brittle bones)

~ General prevalence :6%

Non smokers, no DM, “active” 2-3%  
 (NHANES)

Colorado cyclists

Average prevalence: 25% (16-30%)

Vitamin D deficiency ~ 30%

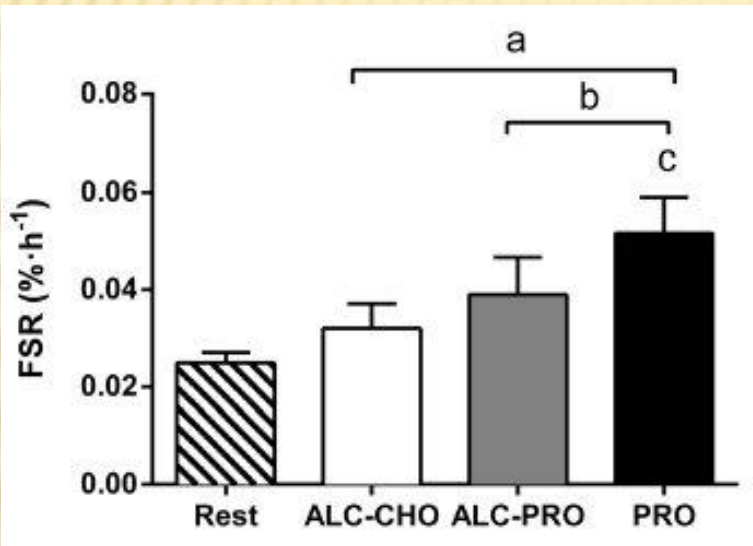
Parathyroid Regulation of serum calcium  
 by releasing Ca<sup>+</sup> from the bones in  
 response to plasma pH change

Weight bearing exercise is not enough:  
 Requires dietary Calcium

Dual-energy X-ray absorptiometry (DXA)

# MAKE SMART DECISIONS ABOUT YOUR RECOVERY

## Alcohol Effects on post exercise Muscle recovery



## Alcohol Effects on metabolism

**Ethanol** upregulates Alcohol dehydrogenase which leads to the accumulation of NADH.

NADH inhibits gluconeogenesis by **preventing oxidation of lactate**

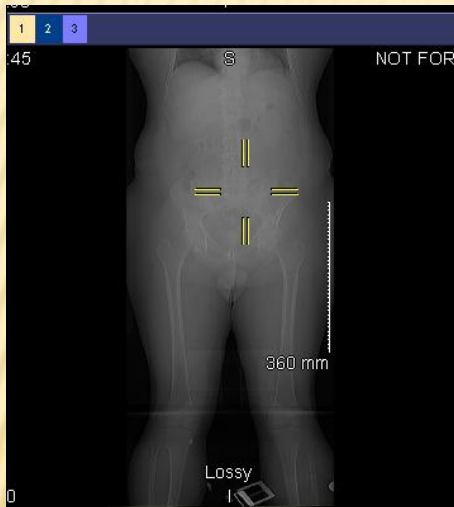
**Results in Hypoglycemia and lactic acidosis**

Lactate upregulates **Insulin which Inhibits fatty acid oxidation** (ATP generation). Signals Fatty acid synthetase



# Be Serious about your recovery-

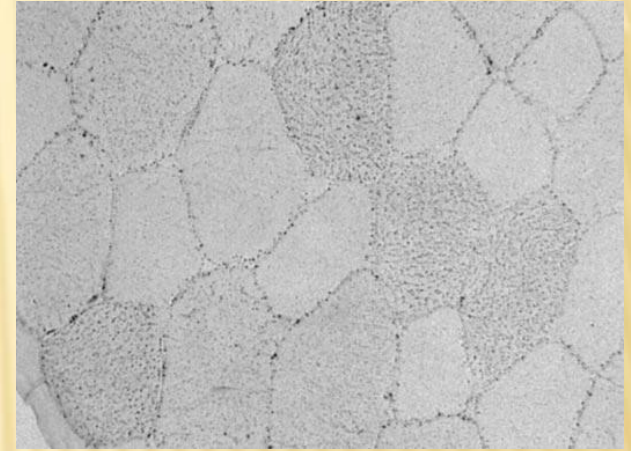
## Normal



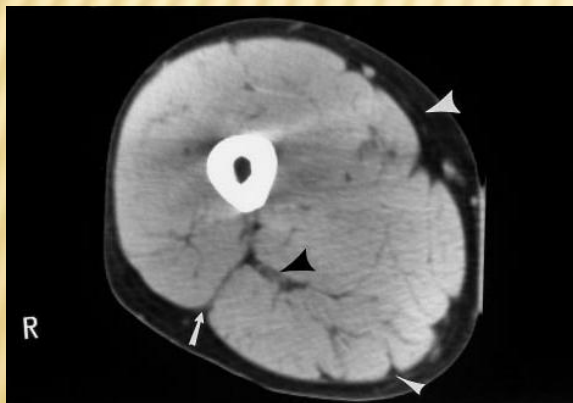
## Obese



## Endurance trained athlete



Persistent **lactate** in the muscle up regulates insulin and turns off fat metabolism



## Weight Gain!



# AVOID WICKEDNESS....

- ✗ Taylor (2014)  
Compared  
marathon  
runners and  
non-runner  
control spouses
- ✗ Assumes  
spouse pairs  
share lifestyle

The screenshot shows the Framingham Heart Study website with a sidebar menu on the left and a risk calculator on the right. The sidebar menu includes links for 'About' and 'Participants', and a list of medical conditions: Atrial Fibrillation, Cardiovascular Disease (with sub-items for 10-year and 30-year risk), Congestive Heart Failure, Coronary Heart Disease, Diabetes, Hypertension, Intermittent Claudication, and Stroke. The risk calculator on the right is titled 'General CVD Risk Prediction Using Lipids' and contains input fields for Sex (M/F), Age (30), Systolic Blood Pressure (125), Treatment for Hypertension (Yes/No), Current smoker (Yes/No), Diabetes (Yes/No), HDL (45), and Total Cholesterol (180). A 'Calculate' button is present. Below the button, it displays 'Your Heart/Vascular Age: 30' and a '10 Year Risk' bar chart. The bar chart shows three levels: 'Your risk' at 1.3%, 'Normal' at 1.3%, and 'Optimal' at 0.7%.

Home |

**Framingham Heart Study** New Snip Ctrl+N  
A Project of the National Heart, Lung, and Blood Institute and Boston University

About Participants

Atrial Fibrillation

Cardiovascular Disease

- Cardiovascular Disease (10-year risk)
- Cardiovascular Disease (30-year risk)

Congestive Heart Failure

Coronary Heart Disease

Diabetes

Hypertension

Intermittent Claudication

Stroke

**General CVD Risk Prediction Using Lipids**

Sex:  
☐ M ☒ F

Age (years):

Systolic Blood Pressure (mmHg):

Treatment for Hypertension:  
☐ Yes ☒ No

Current smoker:  
☐ Yes ☒ No

Diabetes:  
☐ Yes ☒ No

HDL:

Total Cholesterol:

**Calculate**

**Your Heart/Vascular Age: 30**

**10 Year Risk**

<div></div>	Your risk	1.3%
<div></div>	Normal	1.3%
<div></div>	Optimal	0.7%

# IT'S KARMA BABY.....

- ✘ Habitual high volume **exercise improves CV profile**
- ✘ Aerobic training does not reduce atherosclerotic progression associated w/ **age**
- ✘ **Aerobic exercise does not reduce CV disease risk factors due to poor life style choices**

**Ladies: stay away from the bloomin' onions!!**

# AN EXAMPLE OF WICKEDNESS.....



- ✗ Sitting is the new Smoking
  - + Prolonged and habitual sitting (10-15 hrs/day)
  - + Negative effects on a variety of important health outcomes
  - + Sedentary aging leads to cardiac and vascular stiffening
    - ✗ Masters athletes with lifelong exercise histories are indistinguishable from healthy young controls
  - + Negative effects are not mediated by exercise
  - + Breaking up long sedentary intervals important
- + Stand up and jump flat footed 10X!  
(Your bones will thank you!)





# LEARN FROM THE BEST



Volunteer!!



Questions?

IM-fotography  
tustel ico

