

BI 199 APWT Discussion 6



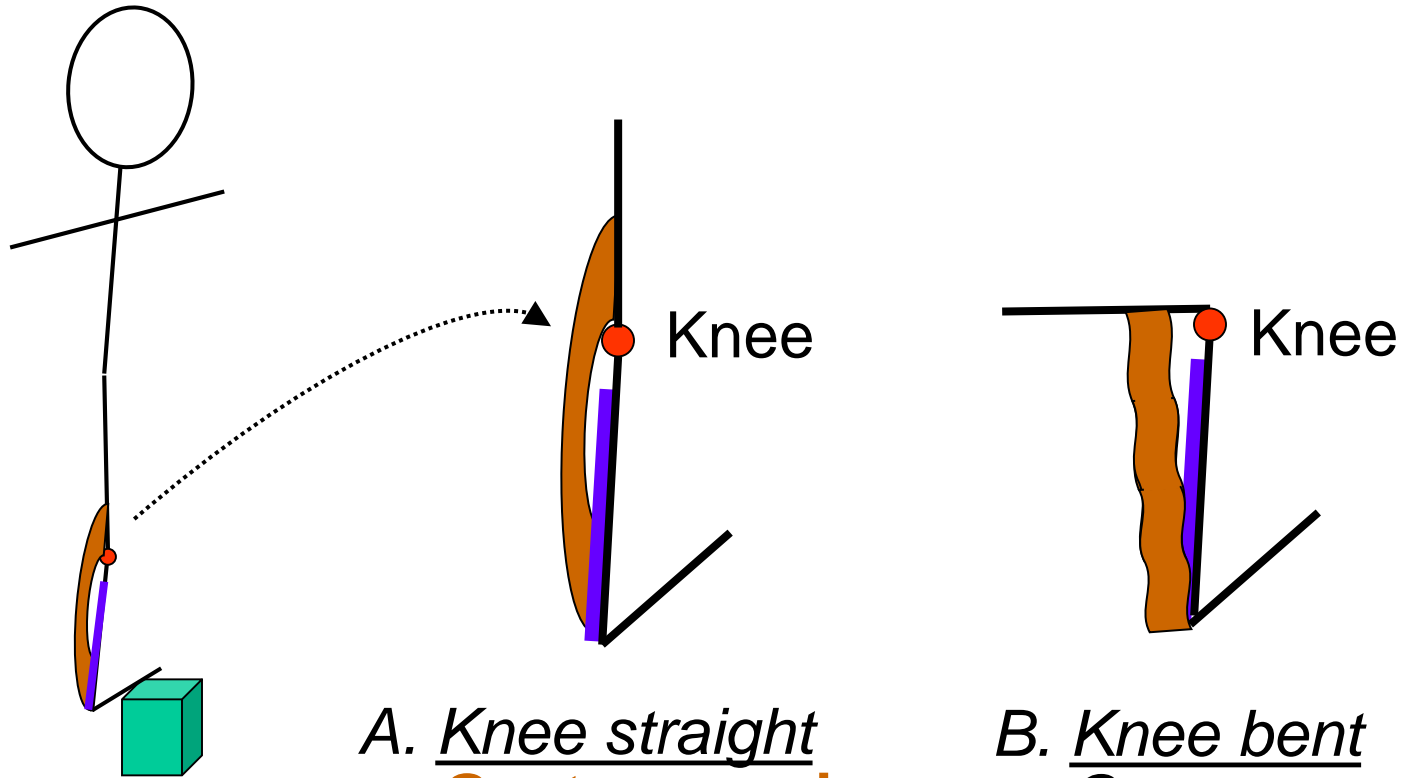
...Personal topic + outline
due next session!

- I. Announcements **This Thursday topic + thematic poster outline due.** Send .doc/.docx file by way of e-mail attachment to: lombardi@uoregon.edu Q?
- II. Review of Anatomy Lab 2 Treasure Hunt
- III. Exercise Physiology & Nutrition in the News
30 lb 30 d? Magic? Lose 179 lb in 32 wk?
Is this possible? Fasting? What is considered reasonable weight loss? ACSM
- IV. The FROM Principle?
- V. Why Combine/Alternate Push with Pull?
Neuromuscular connections, super-setting, time & relaxation advantages
- VI. Q? + Open Discussion

Anatomy Lab Treasure Hunt II. Question 1

Identify & list *muscles* that are worked specifically by the *straight & bent-knee calf raise*.

Which muscles are stressed most by which *unique form* of the calf raise?

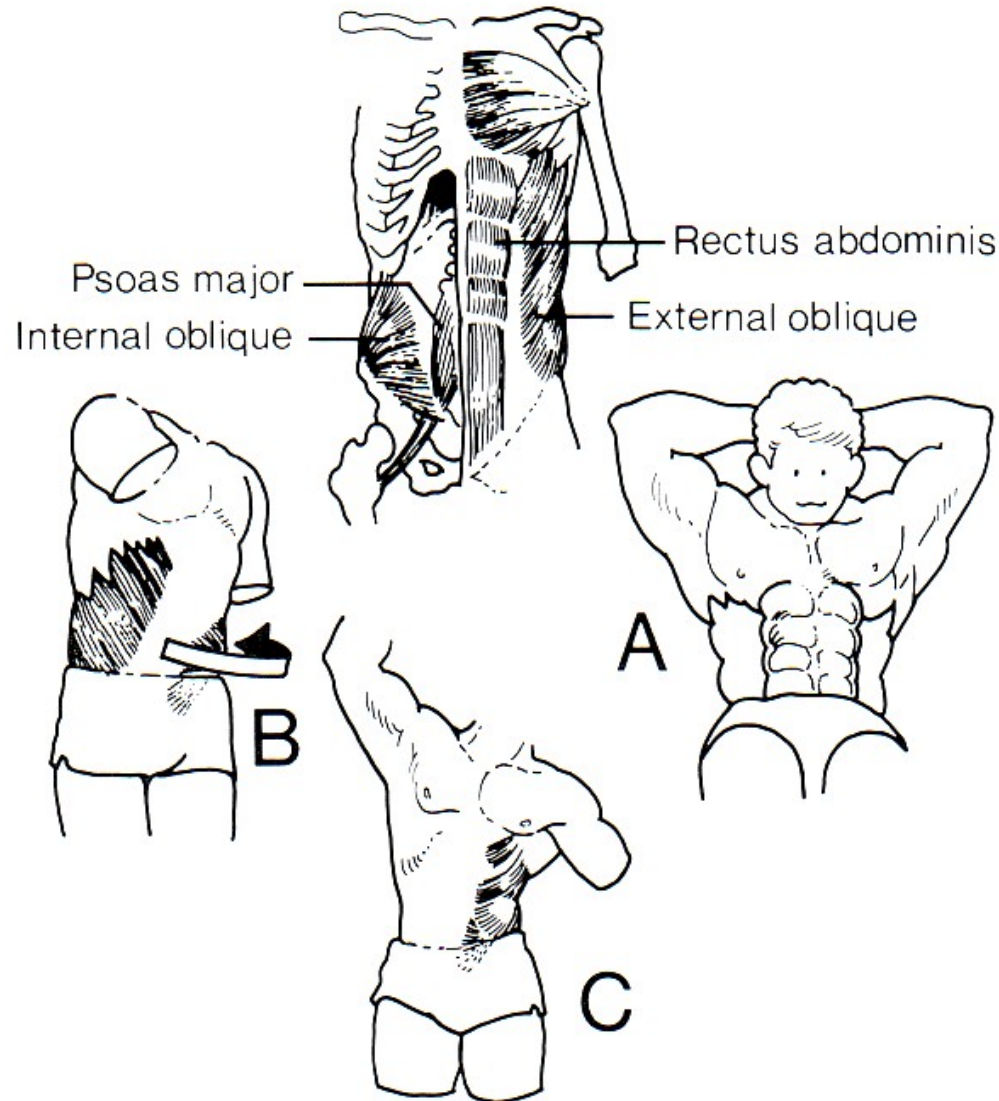


A. Knee straight
Gastrocnemius
stretched &
engaged!

B. Knee bent
Gastrocnemius
slack, **soleus**
engaged

Anatomy Lab Treasure Hunt II. Question 2

Identify muscles that are worked by *trunk twisting* motions?
If the trunk is twisted *counter-clockwise*, which muscles are *activated*?

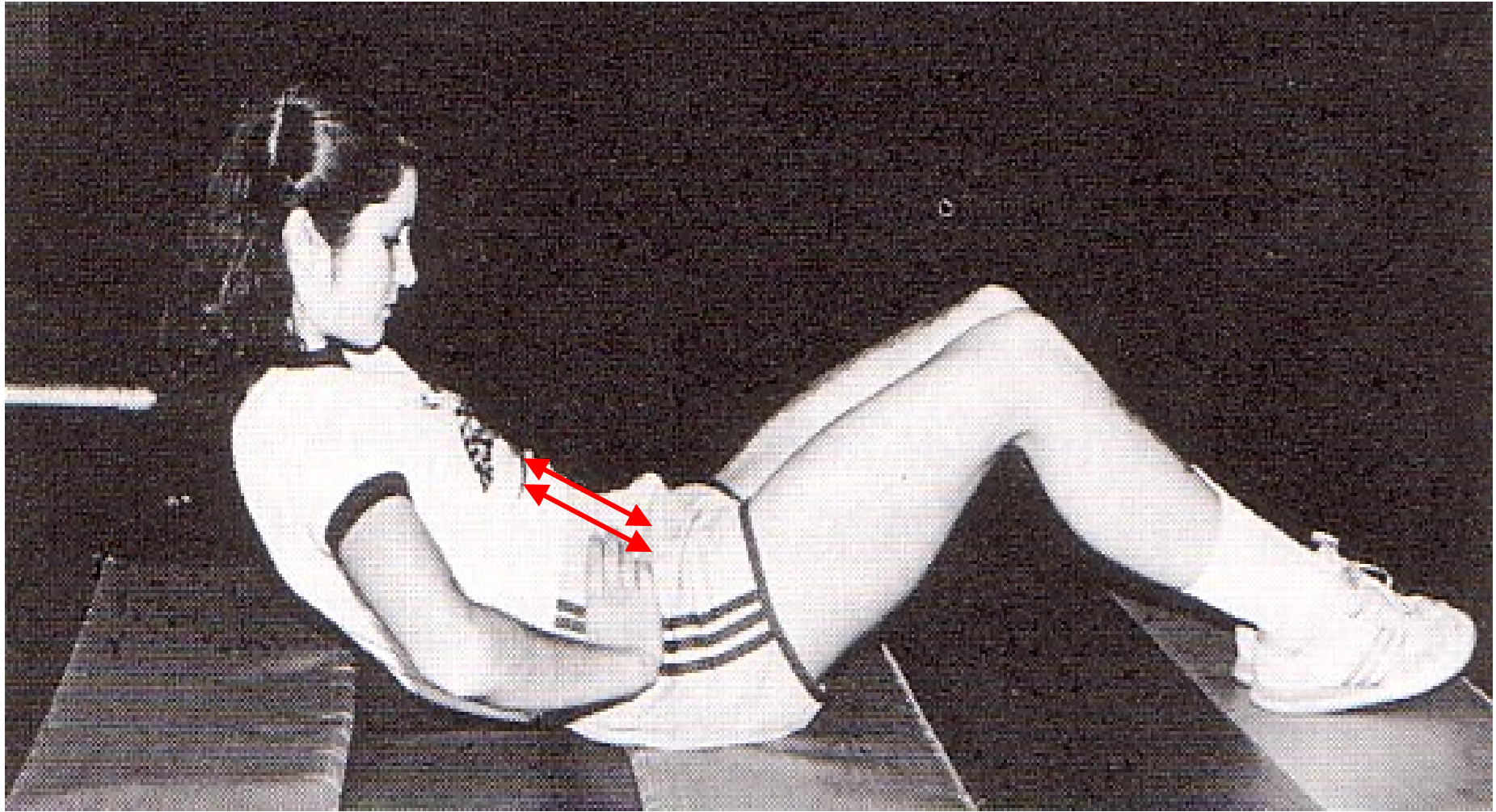


Anatomy Lab Treasure Hunt II. Question 3

From the supine position, if the *trunk* is moved in a linear fashion (without twisting) toward the *lower extremities* (hip flexion), which *muscles* are *activated*? Identify these muscles at your station.

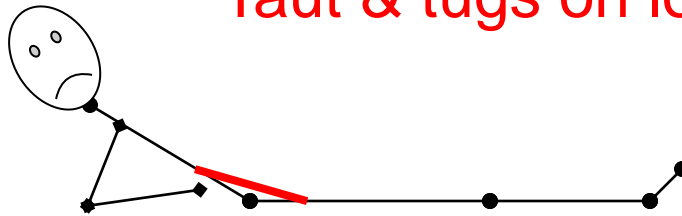
How does keeping the *knees bent at a constant angle* influence the muscles activated?

Trunk flexion activates rectus abdominis muscles



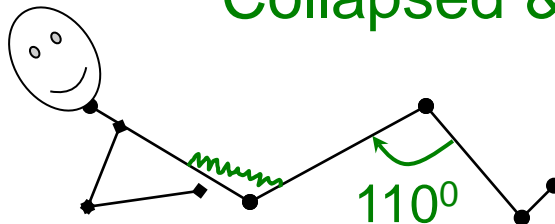
Iliopsoas with *Knees Straight* vs. *Bent*?

Taut & tugs on lower back!



Knees Straight

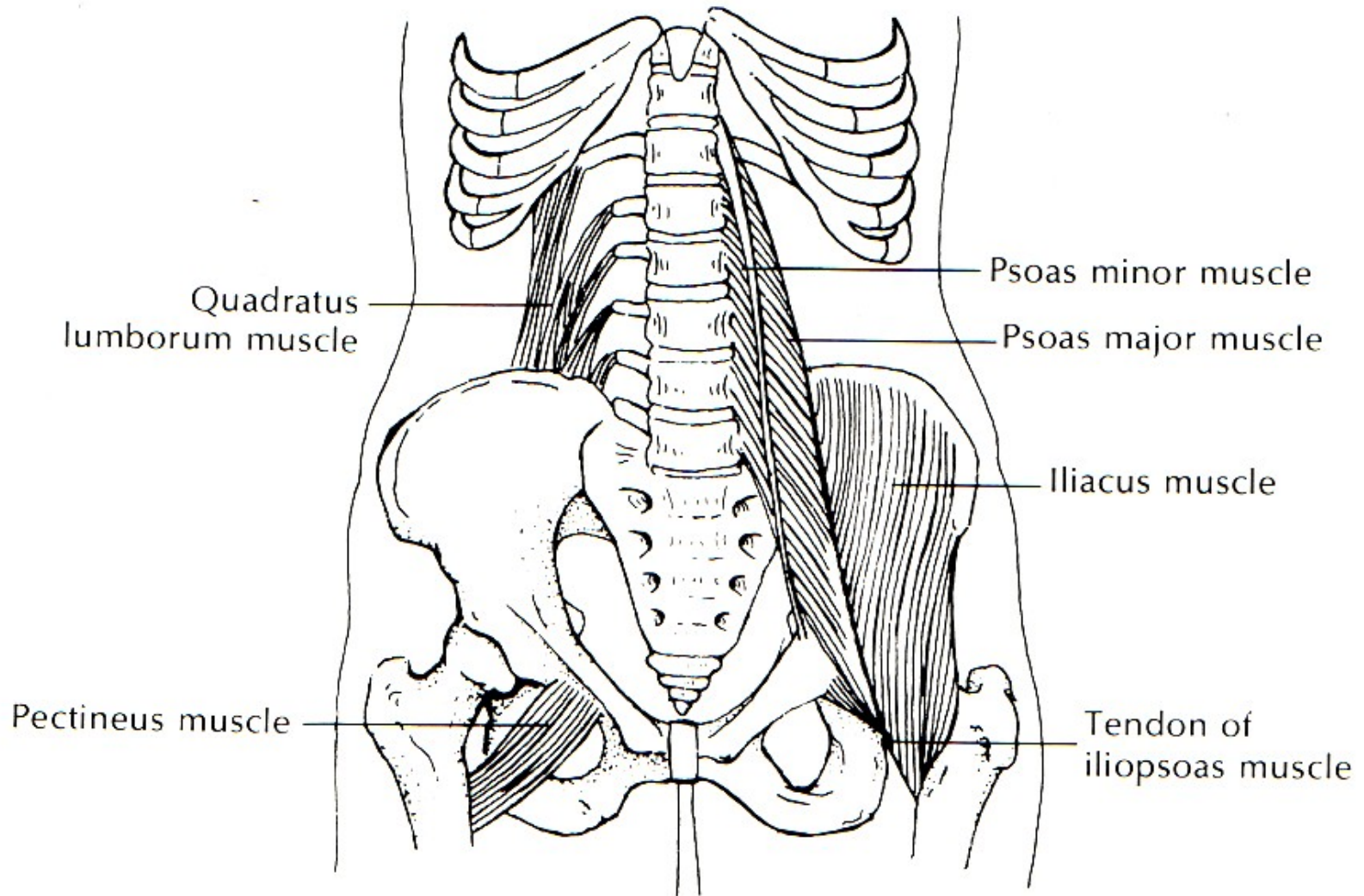
Collapsed & relieves stress!



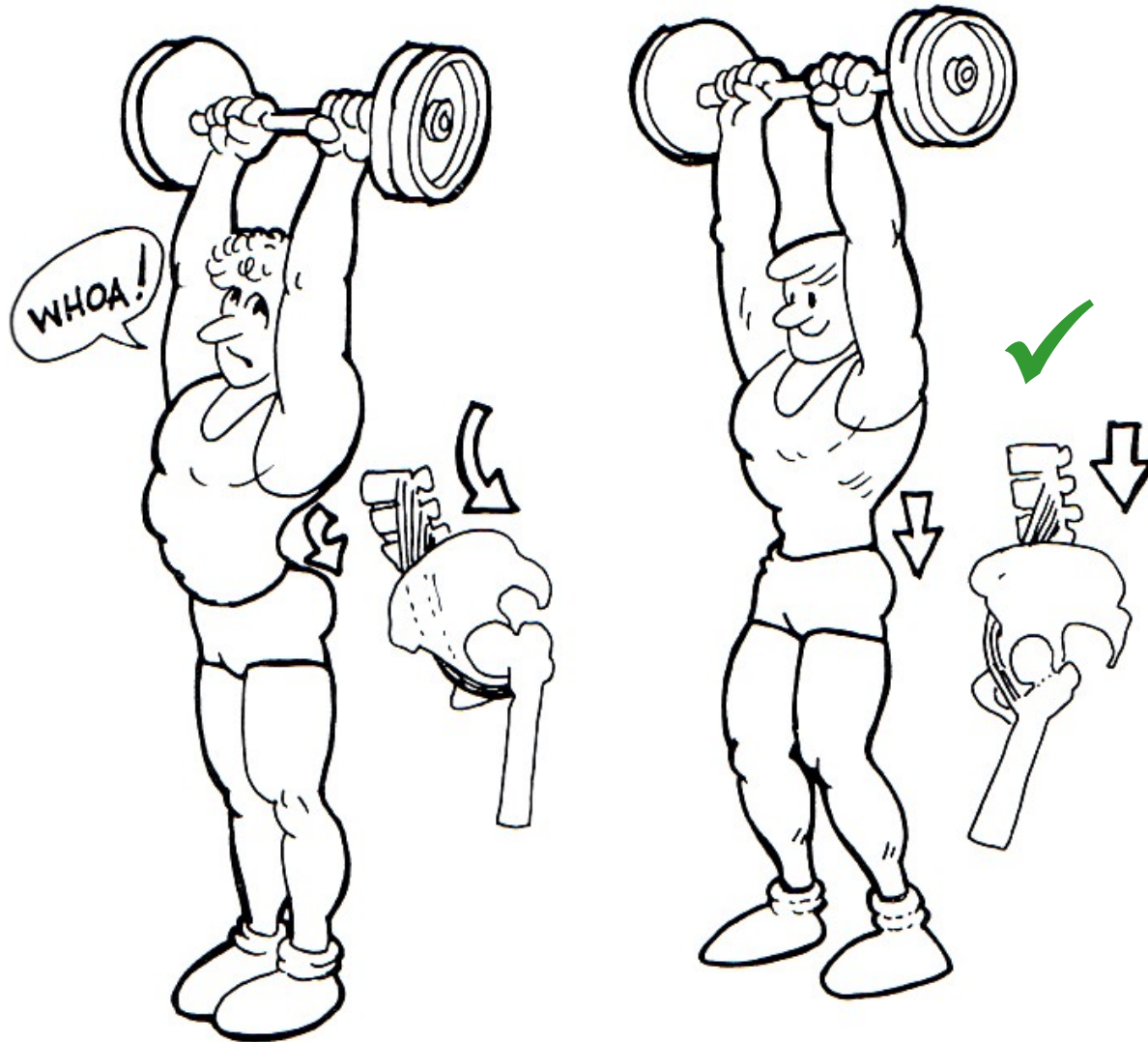
Knees Bent

Hip Flexors? *Iliopsoas, rectus femoris, sartorius*
Feet Anchored vs. *Unanchored*? *Unanchored*

↓ Lower back stress by flexing hips & bending knees



**Contract abdominals, bend knees,
widen stance to reduce back stress!**

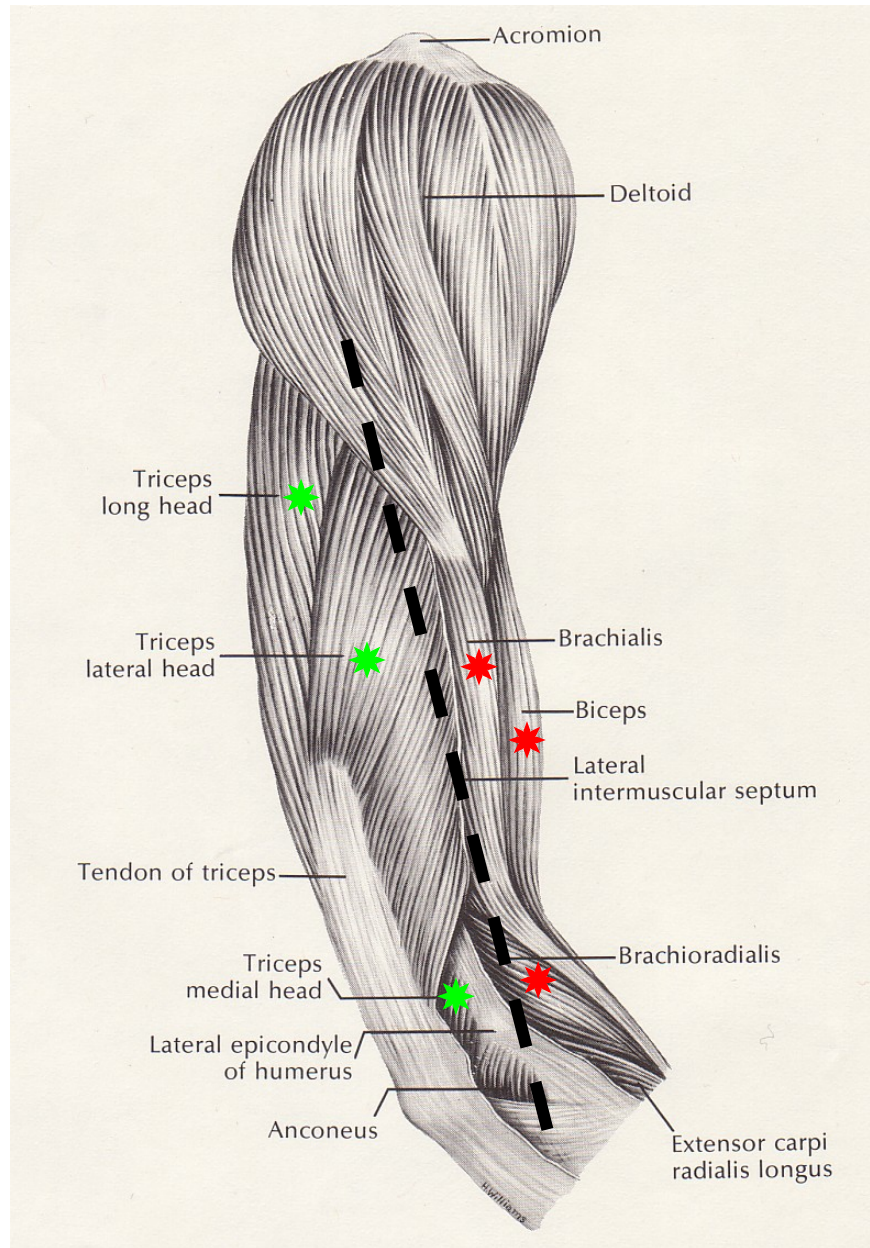


Anatomy Lab Treasure Hunt II. Question 4

Identify and list *subsections* of *arm muscles* worked by the *triceps extension*.

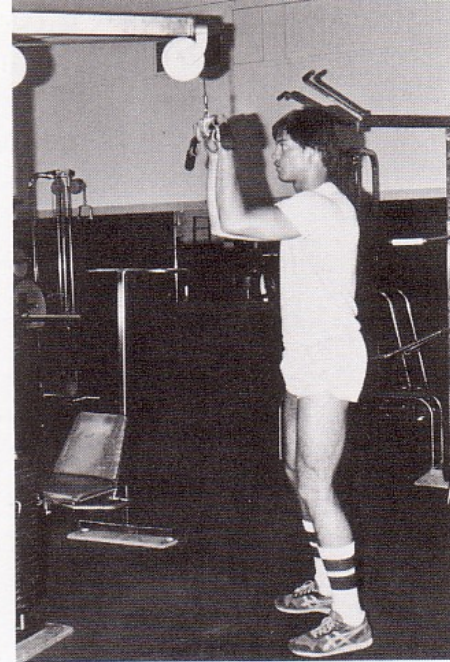
Identify on each other by way of *superficial anatomy* (but be careful not to touch with gloves!) and on the cadaver.

Push - Pull

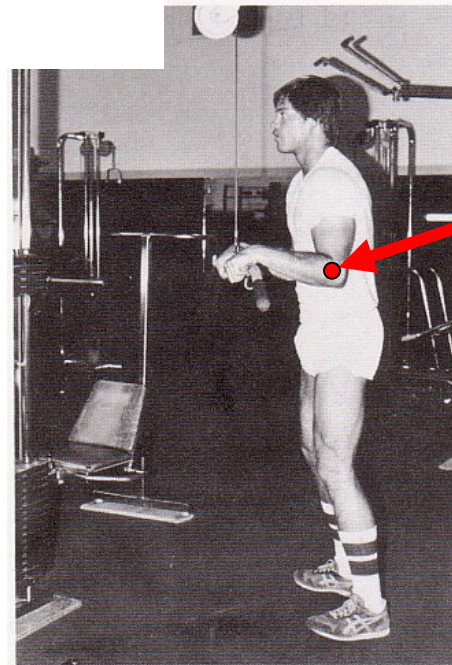


Triceps Extension

1. Isolate axis of rotation.
2. Pin elbows to anterior abdominal side.
3. Fully extend elbows.
4. Flex elbows just beyond 90°.
5. Pause & extend.

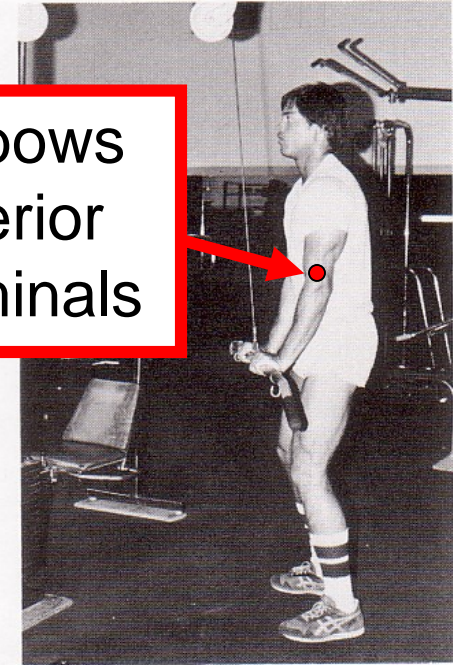


A



B

Pin elbows
to anterior
abdominals



C

NB: Bend knees, contract abdominals! Adjust hands & wrists to maximize range of motion (ROM).

Anatomy Lab Treasure Hunt II. Question 5

Find the “*hitch-hiker*” muscle on your own body and on the cadaver you’ve identified.

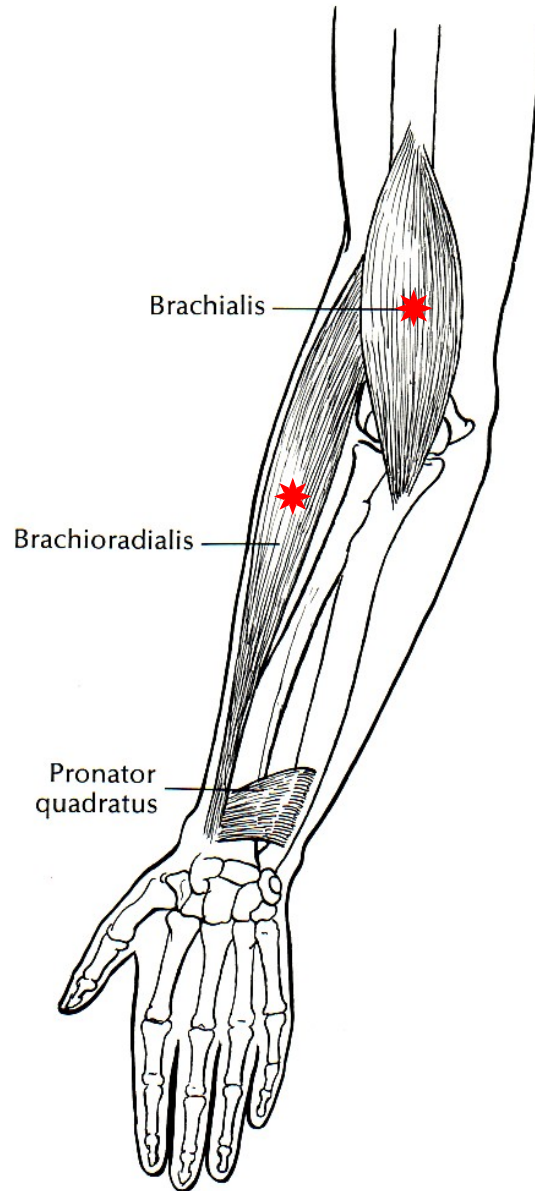
Demonstrate to a partner in your group, the *hand grip for the curl exercise* that is optimal for activating this muscle.

Name and illustrate this grip by drawing a simple sketch.

Identify the *long and short heads of the biceps brachii* and locate the *brachialis*, the prime flexor of the forearm at the elbow.

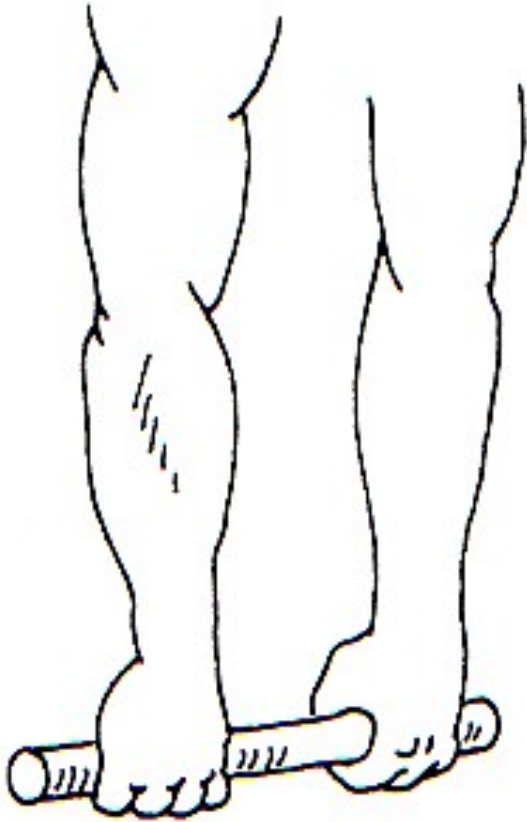
Which specific hand grips isolate each of these muscles?

Brachialis: Prime Flexor of Forearm @ Elbow ***Brachioradialis: Hitchhiker Muscle!***

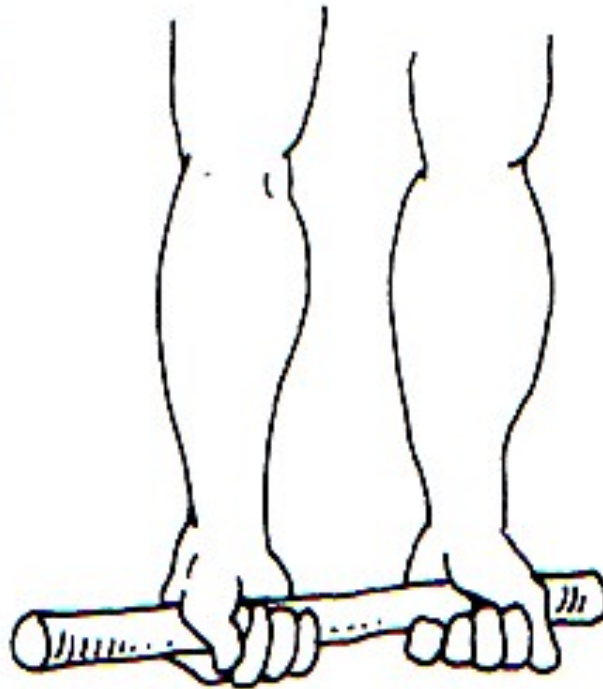


**Pulling or Flexion
of Forearm @
Elbow**

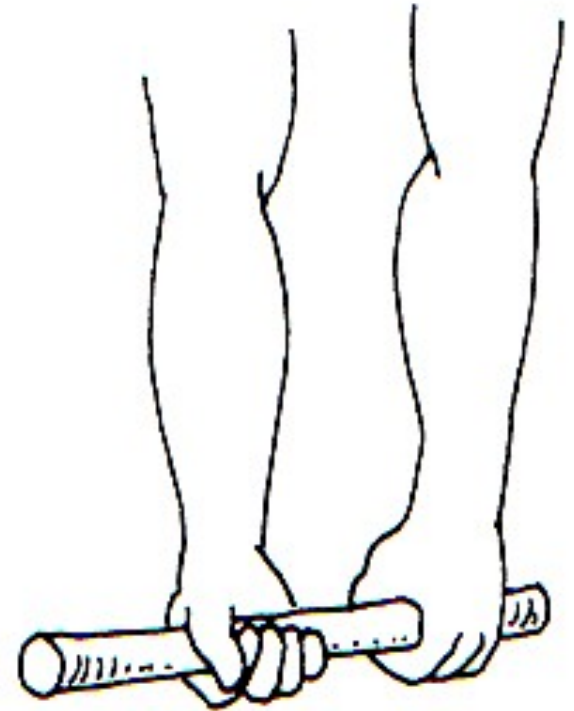
Common grips used in weight training



Pronated
/Overhand



Supinated
/Underhand



Alternate
/Spotting

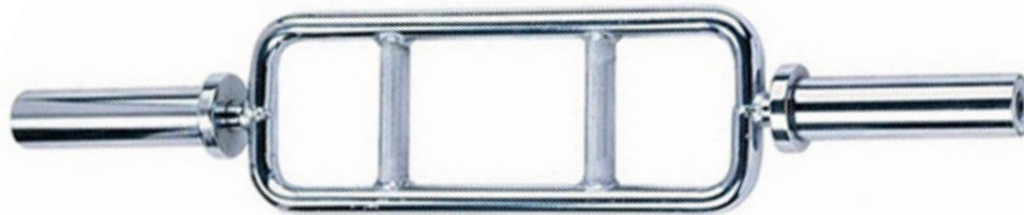
Mid- or hammer-bar grip activates brachioradialis, but why?



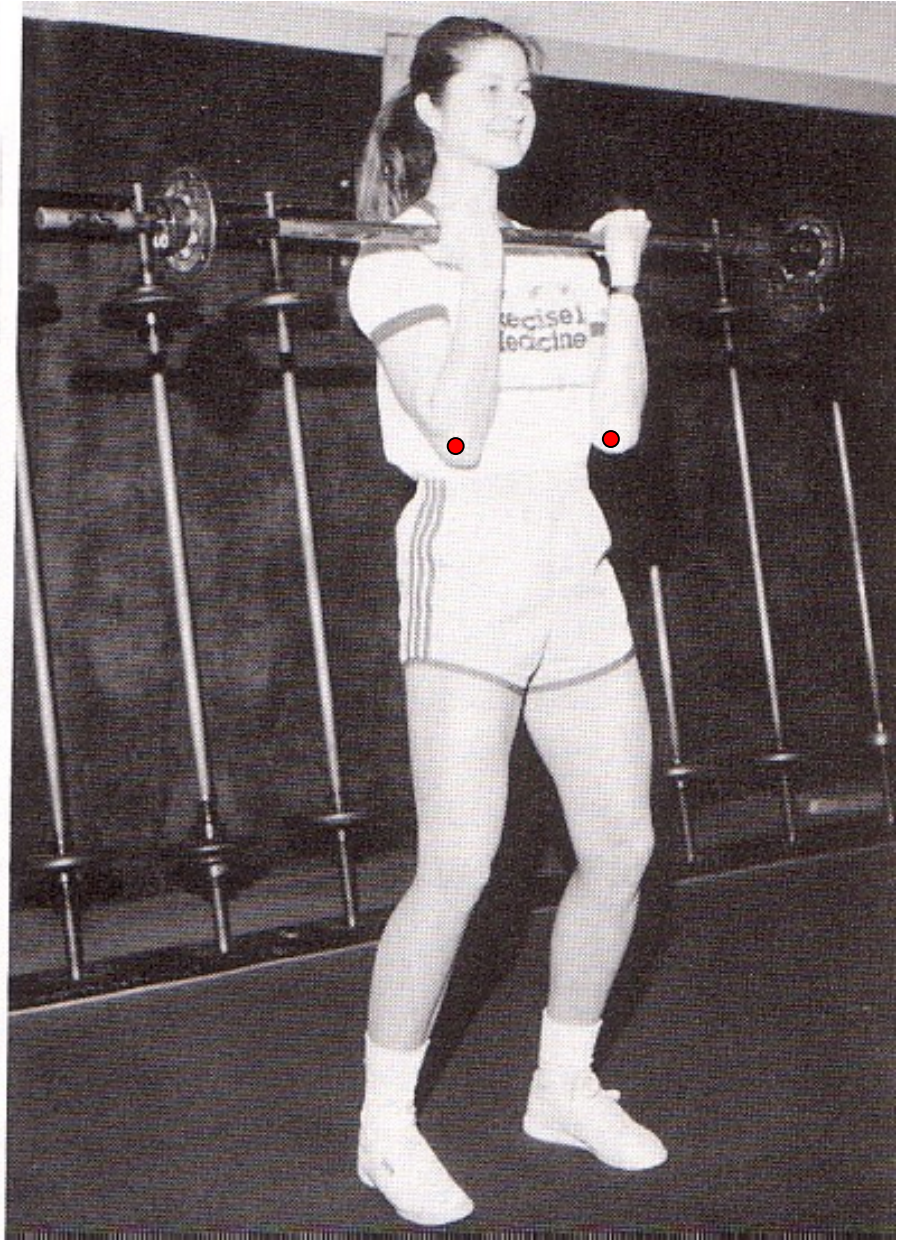
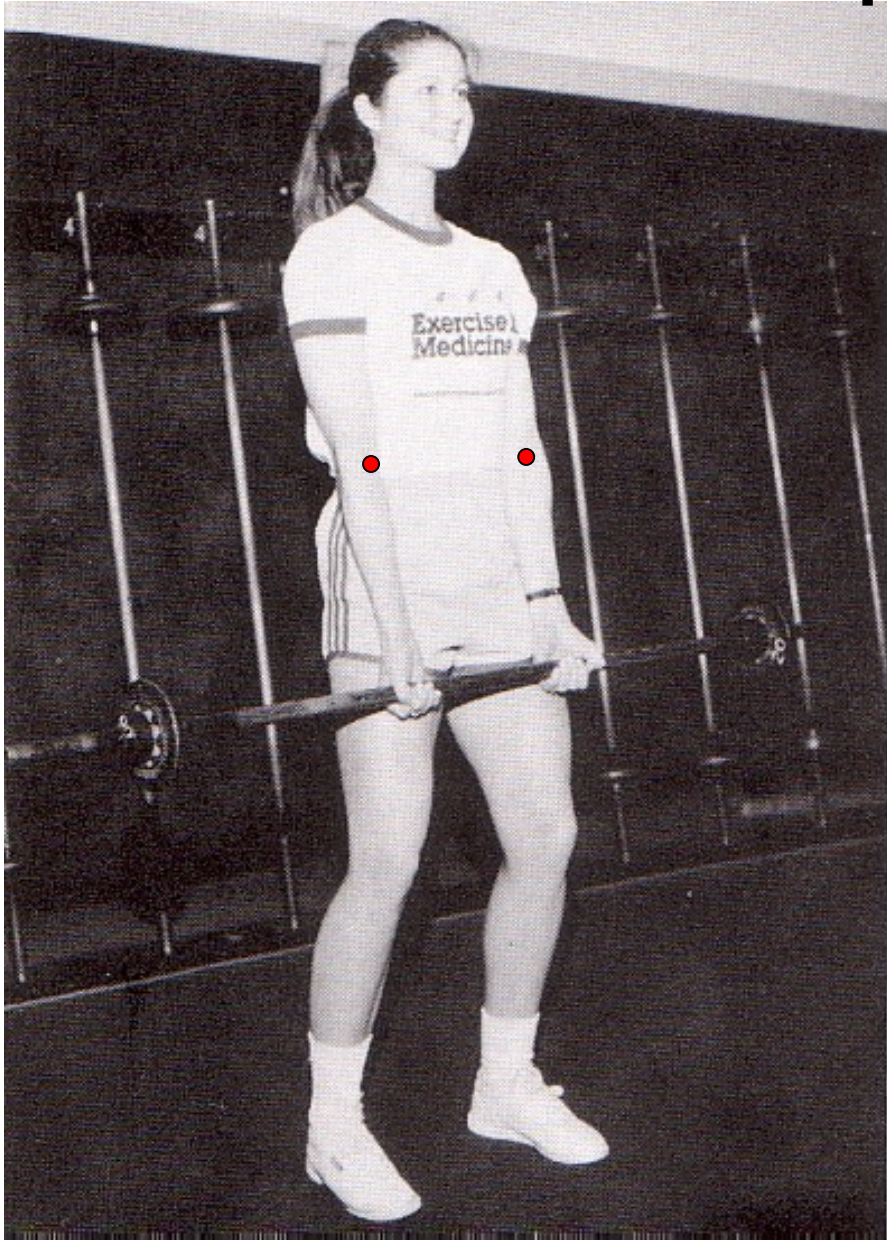
A



B

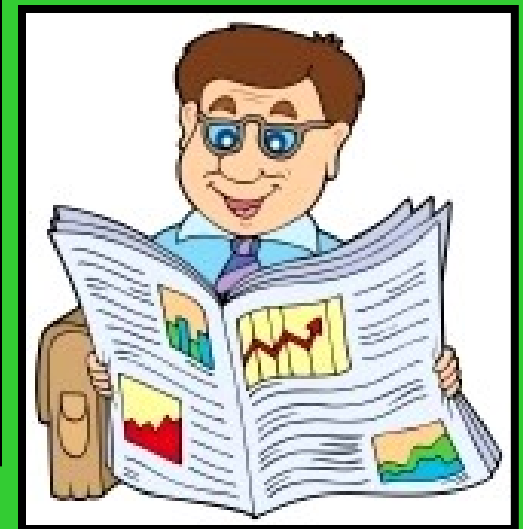
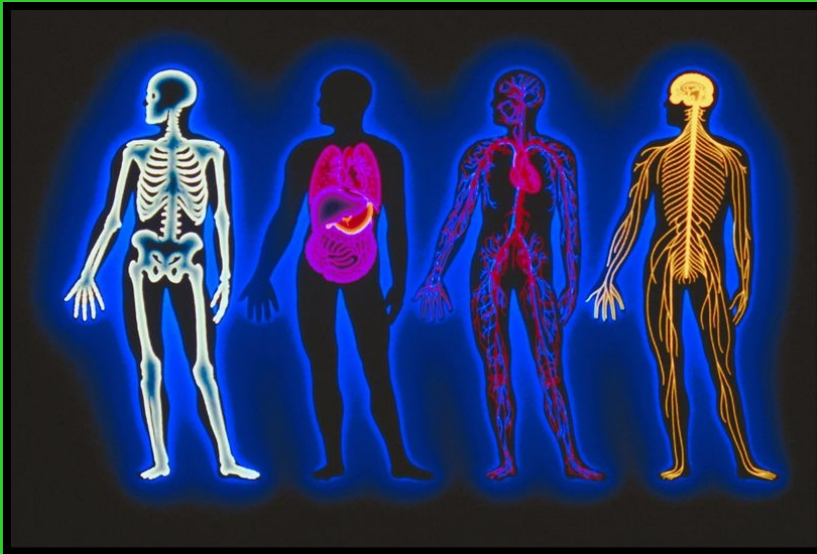


Biceps Curl



NB: Knees bent & abdominals contracted!

Physiology & Nutrition in the News!



Lose 30 lb in 30 days, Magic?

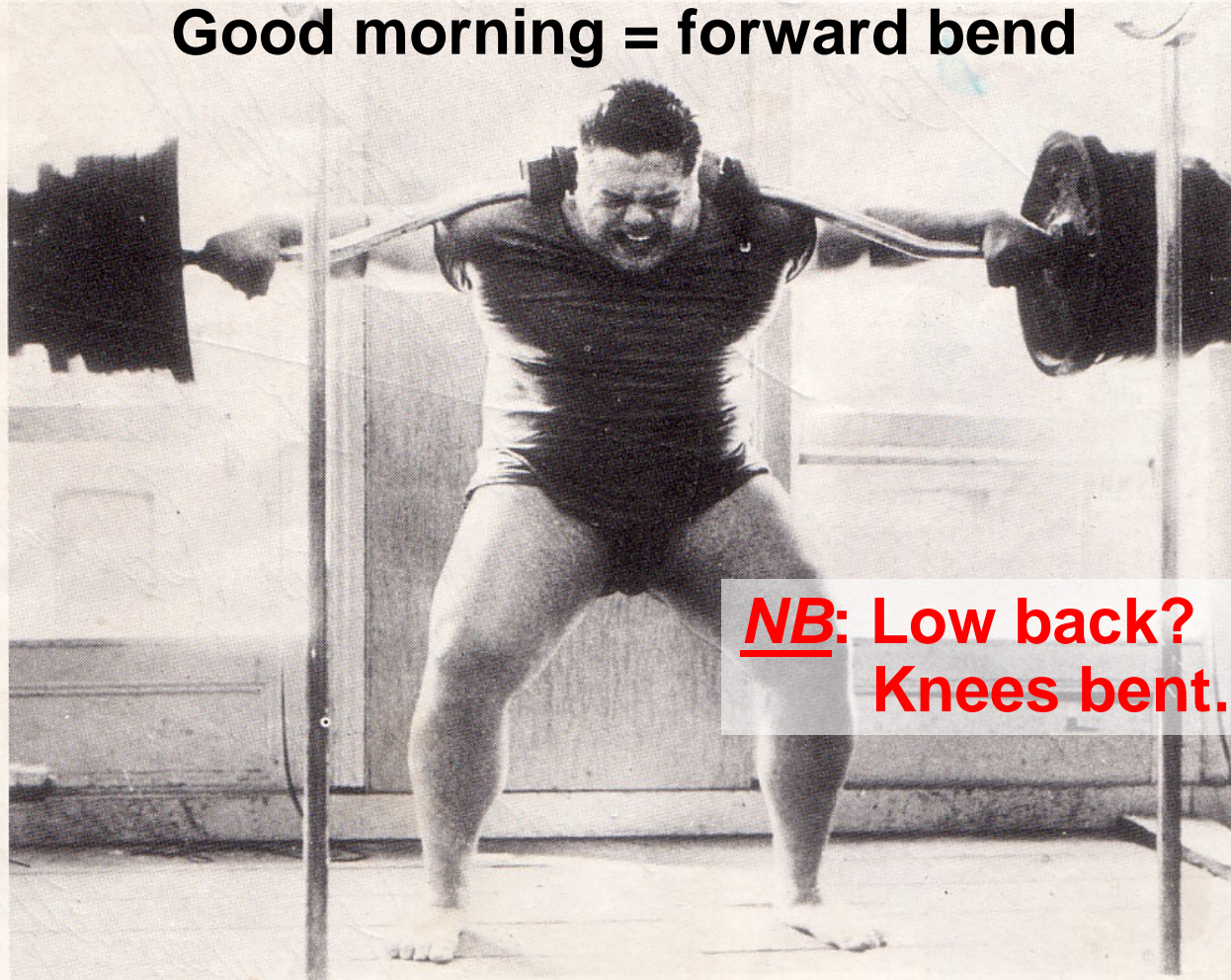


What about science?



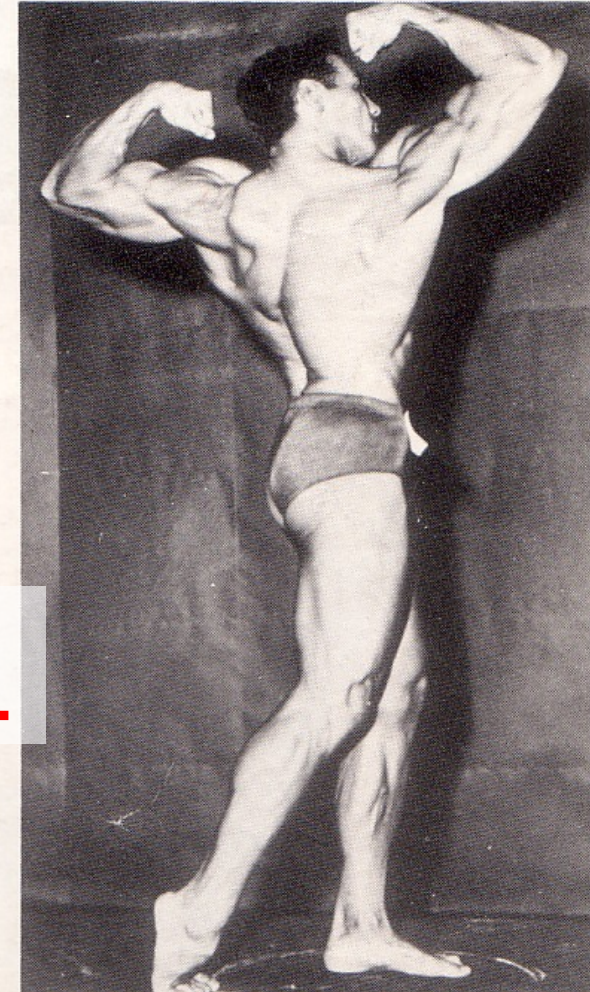
**32-wk Transformation?!! 401 lb to 222 lb!
179 lb in 224 d \equiv 0.8 lb/d \equiv 5.6 lb/wk \equiv 22.4 lb/mo**

Good morning = forward bend

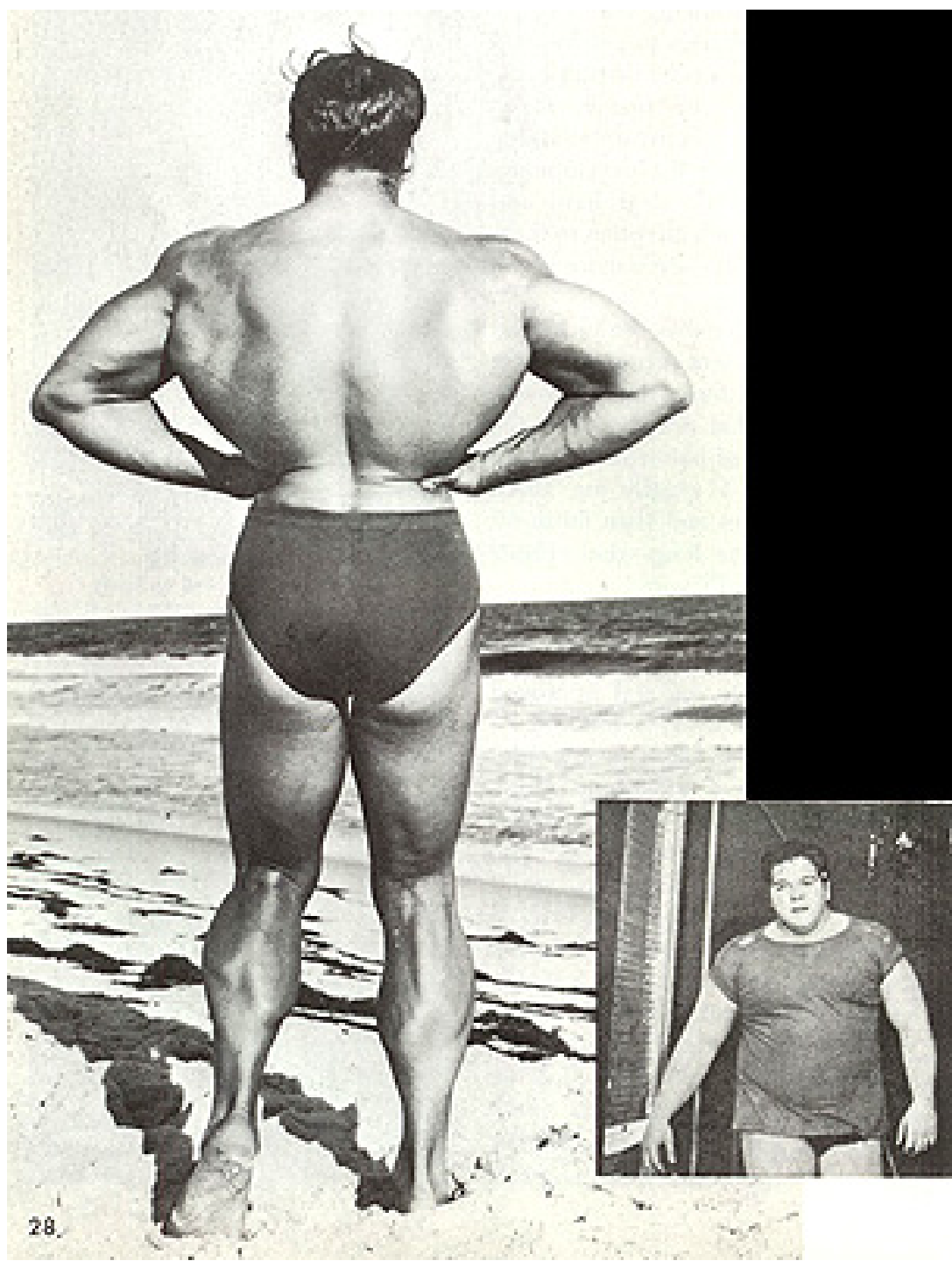


**NB: Low back?
Knees bent...**

Bruce Randall as he appeared when he weighed over 401 lb~~z~~. performing a Forward Bend exercise with 685 lb~~z~~.



and Bruce Randall as he looked when he won the Mr. Universe Contest at a bodyweight of 222 lb~~z~~.



Bruce Randall 1959 NABBA Mr. Universe

HEALTH & STRENGTH NOV. 5 1959
1/6 Forthrightly
NATIONAL PHYSICAL FITNESS JOURNAL

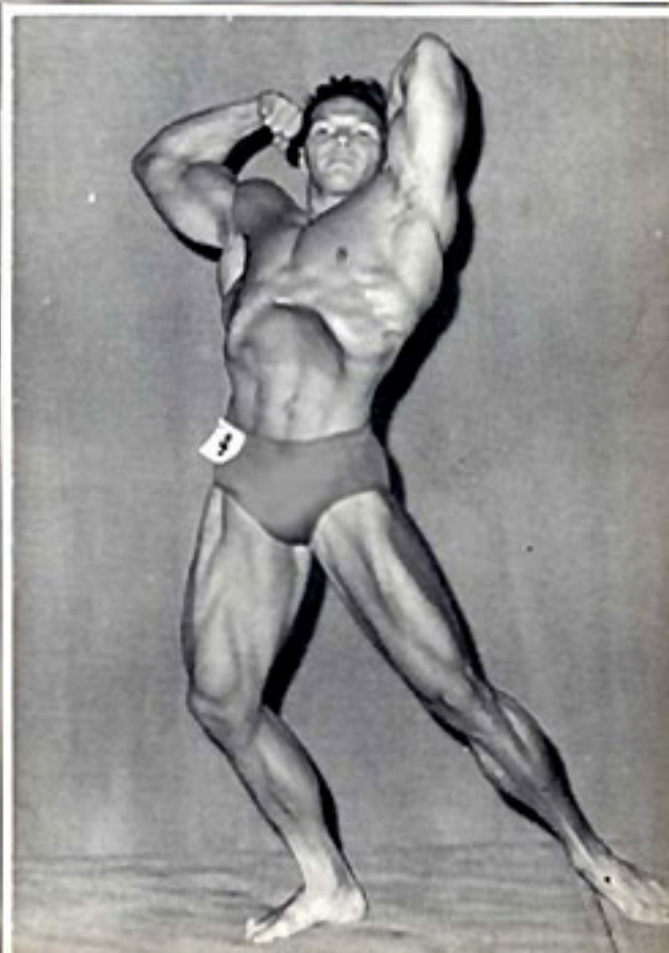
Health
Culture

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Body
Building

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Weight
Lifting

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Wrestling
& Judo

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League
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NABBA
News



HARPER
gainer
the path to physical excellence

*bastion of
no-nonsense
drug-free
training*

issue #75



THE BARBELL WAY TO PHYSICAL FITNESS

Bruce Randall (Mr. Universe)

foreword by **Stan Musial**

A simple effective program
for weight control and a sound
muscular body through the use
of barbells and proper diet.
With over 190 photographs



*To Pat,
Best Wishes to a Great Day!
Bruce Randall
Stan Musial
Washington Redskins
Dean Jay Parker
I. H. Superstar Weightlifting
Coach*

***I'm not sure I believe you!
Why can't I just starve to
lose weight?***



TOTAL FAST =
No Energy Nutrients
(No Carbohydrates, Fats
or Proteins)

ONLY

- 1. Water**
- 2. Vitamins**
- 3. Minerals**

60-day Fast???

Lost 60 lb!! Wow!!

Yet

76.7% {
26 lb Water
20 lb Lean Body Mass
14 lb Fat

Fat < 1/4 total wt loss!

***You can lose weight by
starving – but it's mostly
water & muscle! Also, there
can be complications!***



Potential Complications of Total Fasting

**Nausea, diarrhea, persistent vomiting,
postural hypotension, nutritional
deficiencies, menstrual irregularities,
and...sudden death.**

Positive Aspect??

**General loss of appetite within
first 2 days, maintained
throughout fasting period.**

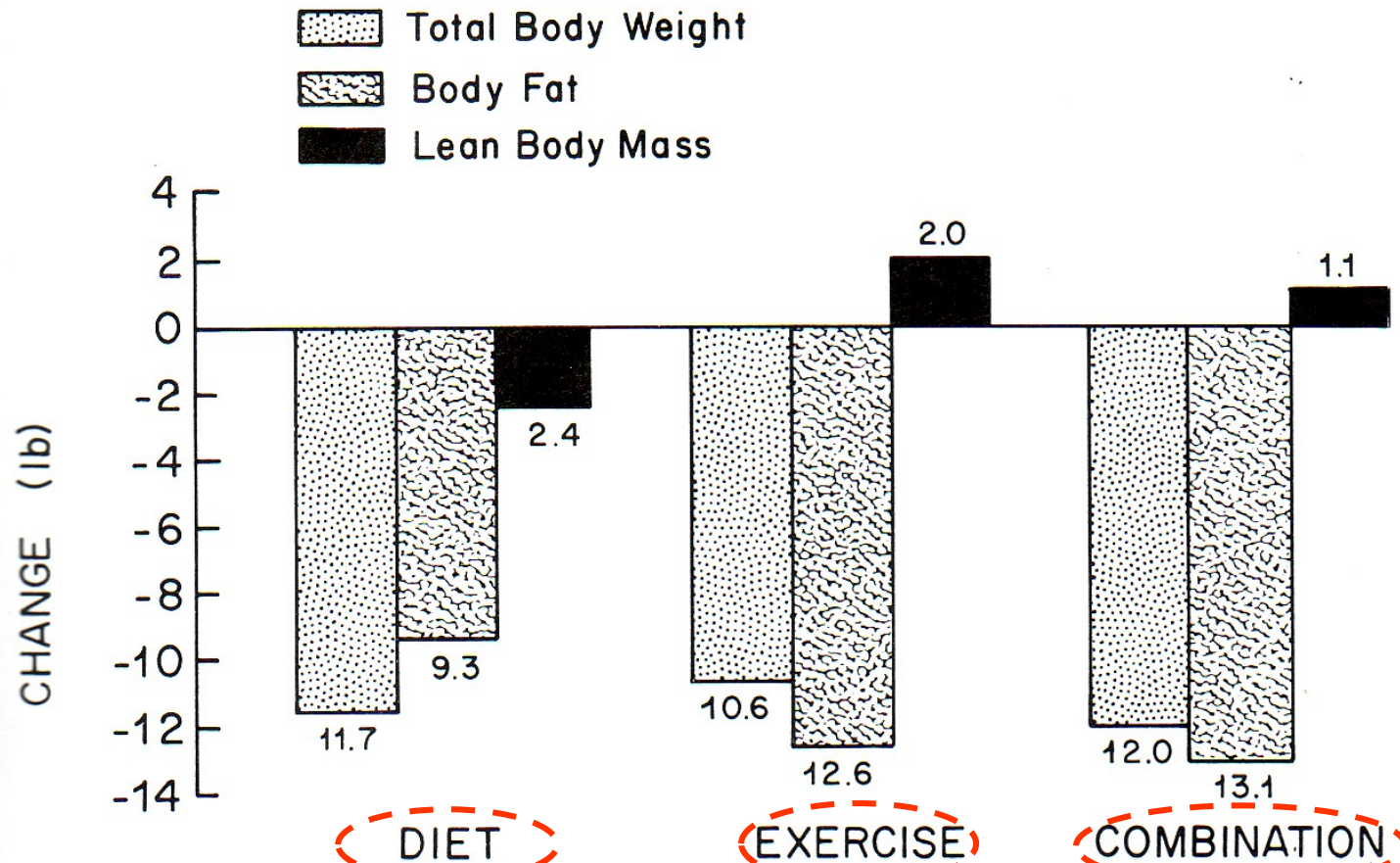


Figure 4-9. Changes in body weight, body fat, and lean body weight for diet, exercise, and combination groups. (From Zuti W. B., and Golding, L. A.: Comparing diet and exercise as weight reduction tools. *Phys. Sportsmed.* 4:49-53, 1976.)

NB: Each group 500 kcal deficit/day, 16 weeks



**Compared to dieting,
exercise is superior in
inducing % body fat
reduction & preserving
lean body mass!**

Lose no more than 2.2 lb or 1 kg/wk!

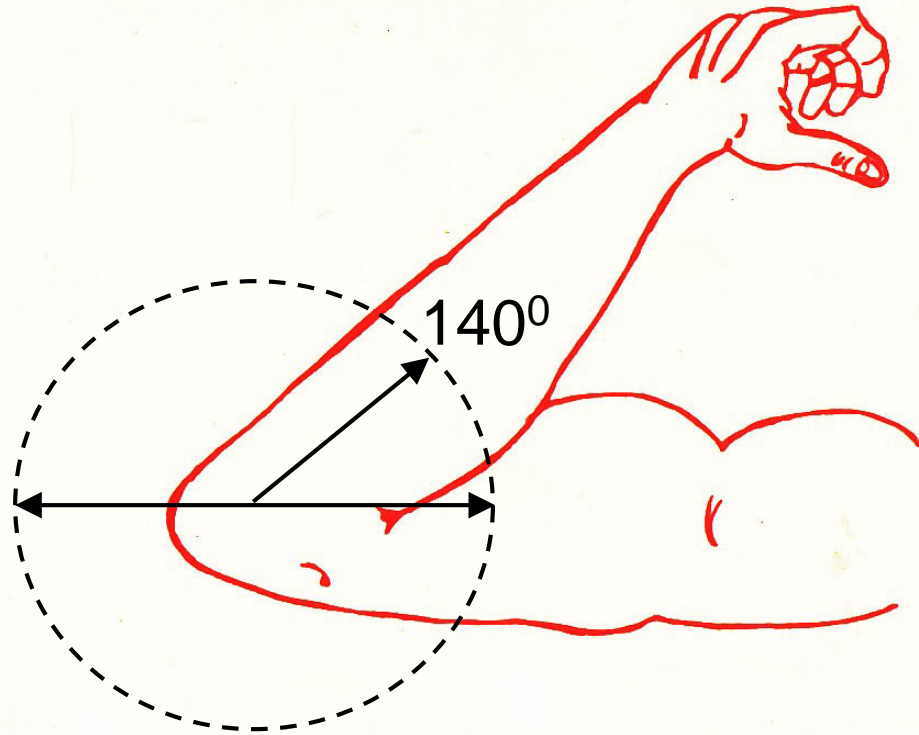


**AMERICAN COLLEGE
of SPORTS MEDICINE**
LEADING THE WAY



ACSM
CERTIFIED
PERSONAL TRAINERSM





FROM Principle

Agonistic - Antagonistic?

Push - Pull

Prime Move(r) - Resist(er)

Promotes - Opposes

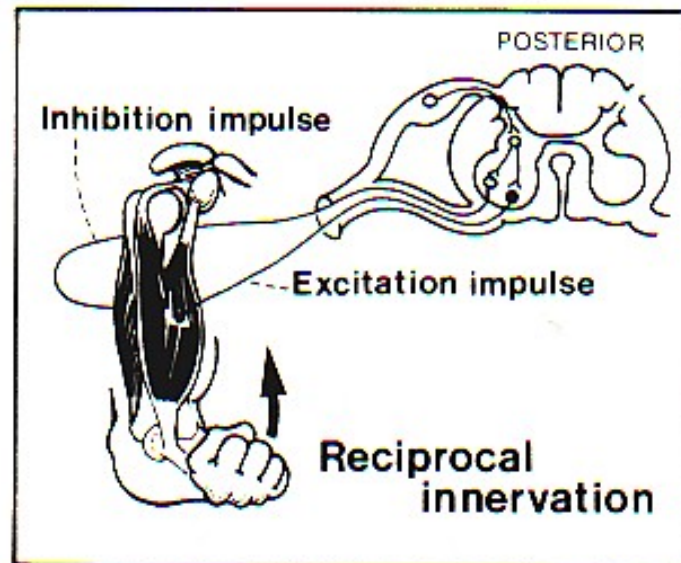
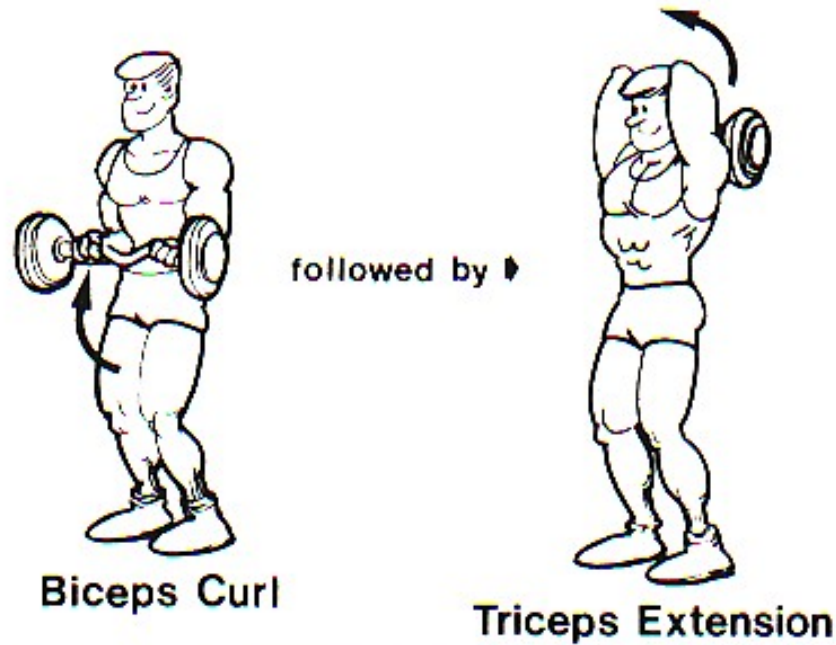
WT Exercise eg?

Bench press? - Bent-over row

Biceps curl? - Triceps extension

Leg extension? - Leg curl

Within Same Workout – Superset to Save Time!



NB: Antagonistic relaxes while agonistic works.

Table H.1 Sample Exercises for Major-Minor, Agonistic-Antagonistic, and Superior-Inferior Programs

Program Type	Muscular Regions	Sample Exercises
Major-Minor (M-M) ^a	Chest and lower extremity	Bench press and accessory chest; squat and accessory thigh and leg exercises.
	Back, shoulder, and arm	Lat pull, military press, biceps curl, triceps extension, and accessory SJA exercises ^d
Agonistic-Antagonistic (A-A) ^b	Chest, shoulder, and triceps	Bench press and accessory chest; military press, triceps extension, and accessory SJA exercises
	Lower extremity, back, and biceps	Squat and accessory thigh and leg exercises; lat pull and accessory back exercises
Superior-Inferior (S-I) ^c	Chest, shoulder, back, and arm	Bench press and accessory chest; military press, lat pull, biceps curl, triceps extension, and accessory SJA exercises
	Lower extremity	Squat and accessory thigh and leg exercises

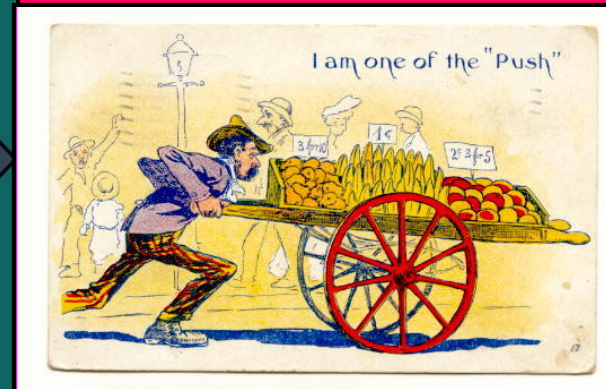
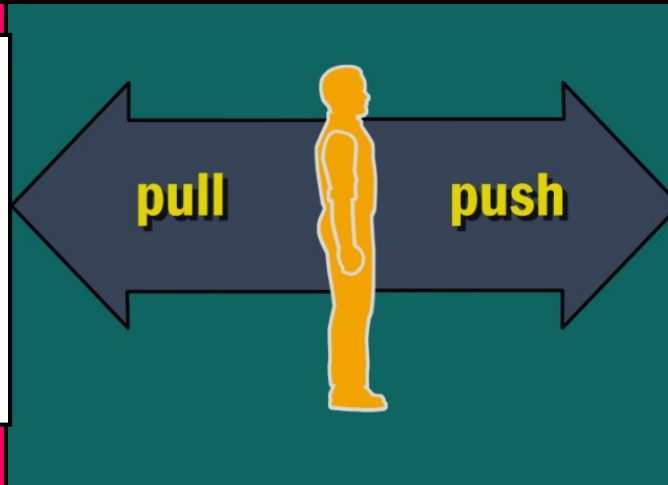
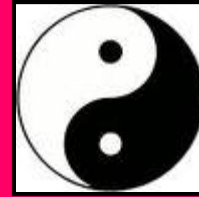
Agonistic-Antagonistic (A-A)^b

NB: Some bodybuilding routines push-pull over separate days.

NB: Always complement



**Push with Pull to
ensure balance!!!**



Discussion

+ Q?