



WEIGHT MANAGEMENT ISSUES IN ATHLETICS

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ISSUES

- Pressure to change weight
- External influences
- Eating environment
- Assumption about what effects weight change may have on performance/life/etc.
- Multitude of erroneous information
- Supplement availability



ISSUES

- Uncomfortable subject for everyone
- Psychological consequences often overshadow physical consequences
- Outcome measurements
- Myths vs reality



ISSUES

- Quick fix
- Athlete's readiness to change
- Understanding that commitment is essential for success
- Goals may be unrealistic with regards to time frame, ultimate body goals



BODY IMAGE ISSUES

- Multifactorial, therefore EVERYONE needs to be involved
- Destroys focus of the affected athlete, team, roommate, friends, coach and administrator
- DO need an action plan that is PROACTIVE, NOT REACTIVE



BODY REALITY CHECK

- What you CANNOT change
 - Height
 - Body Frame
 - Body shape
- What you CAN change
 - Fluid content of the body
 - Muscle Mass
 - Body fat



BODY REALITY

- Body loses fat at about $\frac{1}{2}$ pound per week
- Body gains muscle at a rate of about 1 pound per week
- Changes do NOT happen overnight
- Need to be consistent



TIMING IS EVERYTHING

- Weight goals should be addressed and implemented well in advance of the season or at the end of the season, not during



A STARTING POINT

- Body composition assessment
 - Skinfold measurements
 - BIA
 - Bod Pod
 - Hydrostatic weighing
 - DEXA
 - Circumference measurements
 - Height
 - Weight
 - BMI

What Is Your BMI?

Body Mass Index (BMI) is a fast and easy way for adults 20-years and older to determine their height and weight ratio.

To determine your BMI, find the column closest to your weight in pounds. Read down the column until it crosses the row that closely approximates your height in feet and inches.

		Weight																																
		100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330									
Height	5'0"	20	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65									
	5'1"	19	21	23	25	27	28	30	32	34	36	38	40	42	44	45	47	49	51	53	55	57	59	61	62									
	5'2"	18	20	22	24	26	27	29	31	33	35	37	38	40	42	44	46	48	49	51	53	55	57	59	60									
	5'3"	18	19	21	23	25	27	28	30	32	34	36	37	39	41	43	44	46	48	50	51	53	55	57	59									
	5'4"	17	19	21	22	24	26	28	29	31	33	34	36	38	40	41	43	45	46	48	50	52	53	55	57									
	5'5"	17	18	20	22	23	25	27	28	30	32	33	35	37	38	40	42	43	45	47	48	50	52	53	55									
	5'6"	16	18	19	21	23	24	26	27	29	31	32	34	36	37	39	40	42	44	45	47	49	50	52	53									
	5'7"	16	17	19	20	22	24	25	27	28	30	31	33	35	36	38	39	41	42	44	46	47	49	50	52									
	5'8"	15	17	18	20	21	23	24	26	27	29	30	32	34	35	37	38	40	41	43	44	46	47	49	50									
	5'9"	15	16	18	19	21	22	24	25	27	28	30	31	33	34	36	37	38	40	41	43	44	46	47	49									
	5'10"	14	16	17	19	20	22	23	24	26	27	29	30	32	33	35	36	37	39	40	42	43	45	46	47									
	5'11"	14	15	17	18	20	21	22	24	25	27	28	29	31	32	34	35	36	38	39	41	42	43	45	46									
	6'0"	14	15	16	18	19	20	22	23	24	26	27	29	30	31	33	34	35	37	38	39	41	42	43	45									
	6'1"	13	15	16	17	19	20	21	22	24	25	26	28	29	30	32	33	34	36	37	38	40	41	42	44									
6'2"	13	14	15	17	18	19	21	22	23	24	26	27	28	30	31	32	33	35	36	37	39	40	41	42										
6'3"	13	14	15	16	18	19	20	21	23	24	25	26	28	29	30	31	33	34	35	36	38	39	40	41										
6'4"	12	13	15	16	17	18	20	21	22	23	24	26	27	28	29	30	32	33	34	35	37	38	39	40										

Underweight (BMI less than 18)
 Healthy Weight (BMI between 18 & 24.9)
 Overweight (BMI between 25 & 29.9)

Obese (BMI between 30 & 39.9)
 Severely Obese (BMI 40 & above)

How does BMI relate to health?

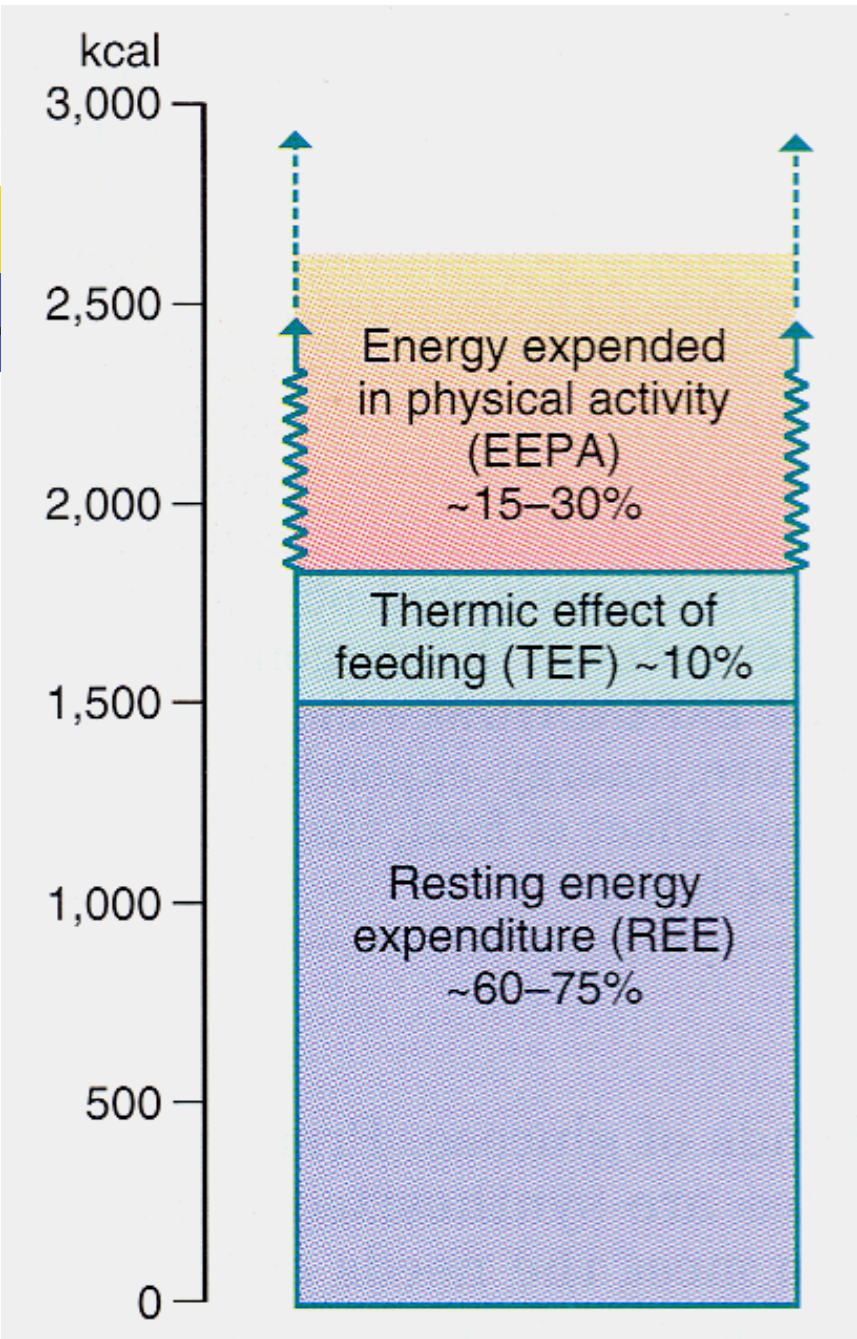
The BMI ranges are based on the effect body weight has on disease and death. As BMI increases, the risk for some disease increases. Common conditions related to overweight and obesity include premature death, cardiovascular disease, high blood pressure, osteoarthritis, diabetes and some cancers.

Talk to your doctor!

Whatever your BMI, talk to your doctor to see if you are at an increased risk. Physical activity and good nutrition are key factors in leading a healthy lifestyle and reducing risk for disease.

Information about your health brought to you by your physician and the Allegheny County Medical Society.

ALLEGHENY COUNTY
 MEDICAL SOCIETY
www.acms.org



The components of total energy expenditure



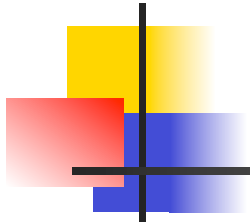
KNOW YOUR NUMBERS

- BMR- Basal Metabolic rate
- Men: $66.5 + (13.75 \times \text{wt}(\text{kg})) + (5.003 \times \text{ht}(\text{cm})) - (6.775 \times \text{age}(\text{yrs}))$
- Women: $655.1 + (9.563 \times \text{wt}(\text{kg})) + (1.850 \times \text{ht}(\text{cm})) - (4.676 \times \text{age}(\text{yrs}))$



STARTING POINT

- Athletes need to be able to set REALISTIC, ACHIEVEABLE goals that do not compromise performance, and some way of tracking progress
- Need to know anthropometrics: LBW vs Fat, hydration status
- Athlete's level of commitment and willingness to change
- Athletes need to log eating



WEIGHT GAIN- INCREASING MUSCLE MASS



WHAT I HEAR

- Coach won't let me start unless I gain 30 pounds
- I'm drinking 2 protein shakes a day and not getting bigger
- Can't I just take creatine?
- I eat all the time
- I can't eat in the morning or after practice, food makes me sick
- I am too tired to chew
- I tried to eat more for 2 days and nothing happened



WHAT ATHLETES TEND TO DO

- Don't eat more, just add supplements
- Focus on protein to the exclusion of all else
- Forget about the importance of resistance training
- Add strength training without increasing intake



ISSUES

- Belief that one can't increase mass without supplements
- Food alone can't possibly work
- Don't' think out of the box in terms of foods- need to challenge the food rules
- Accessibility and availability of food



QUESTIONS TO ASK

- How many times a day do you eat?
- Is your eating pattern different on the weekend?
- Do you eat before/after exercise?
- How soon before/after exercise do you eat?
- What do you eat/drink?
- What is the size of your plate, glass, bowl
- Do you snack, how often and on what?
- How much time do you practice/day?
- Do you exercise in addition to your sport(s)?
- Do you fidget, or do you sit still?
- Do you use supplements?



FACTS

- Weight gain typically occurs at a rate of 1/2 pound per week
- To gain an additional pound of muscle per week would require eating an extra 10-14 gms protein/ day (12 oz milk, 2 slices deli meat)
- **MAXIMUM USABLE AMOUNT of PROTEIN**
(gms) = 1 x body weight (lbs)



ISSUES

- Meals are often erratic
- *Doughnuts* alone won't build muscle
- Fat phobic athletes will find it harder to gain
- If exercise frequency and intensity increase, calorie needs increase as well



MOST COMMON WEIGHT GAIN MYTHS

- Need to increase protein drastically
- Carbs will lead to fat gain not muscle gain
- Need to use supplements to gain weight
- Only need to eat more, not more often
- Beverages won't help one gain mass

GAIN





RECOMMENDATIONS

- Food first, before high calorie beverages or other filling but low calorie food; ie. Salad
- Eating needs to be a priority- eat often and enough, with 1/4 more at every eating episode
- Keep food around to nibble on
- (in dorm, at practice,etc.)



RECOMMENDATIONS

- Add higher calorie foods to every meal
 - Granola instead of Cheerios
 - Nuts added to cereal
 - Rice over pasta
 - Bagels over bread
 - 1 or 2% milk instead of skim
- Every food must count
 - Juice instead of water



ADDING CALORIES

- Suggest an increase of 1000 calories per day- and provide a plan of action
 - Frosted flakes to granola- calories added: 250
 - 2 sl turkey, 1 sl cheese on bread to 4 slices turkey, 2 slices cheese on a bagel- calories added: 300
 - From chips to trail mix- calories added: 100
 - From water to 8 oz glass of juice and 12 oz glass of skim milk- calories added: 240 calories
 - Add 2 ounces of meat and an extra spoonful of pasta, rice, or potato to dinner: 150 calories
- TOTAL calories added: 1040



FOOD ALTERNATIVES

Provide athletes with a list of food alternatives to supplements

- Instead of whey protein powder, add yogurt, cheese or milk
- Instead of glutamine supplement: egg, turkey, beef, tuna
- Instead of NO stimulators- have a glass of orange juice



FOOD SWAPS

- Instead of:

- Cornflakes
- Cheerios
- Toast
- 6 oz glass of juice
- Butter/jelly on toast
- Pretzels
- Water at practice
- 3 cookies

- Choose:

- Frosted mini wheats
- Granola
- Bagel
- 12 oz glass of juice
- Peanut butter/jelly
- Nuts
- Sports drink
- A muffin



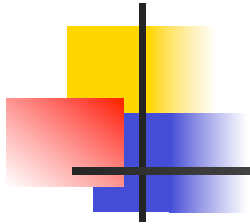
RECOMMENDATIONS

- Need to do this 7 days a week
- Increase calories in all ways: through snack foods, as well as meals
- Foods over supplements
- Coaches, athletic trainers, physicians need to encourage and athletes to eat!



ATHLETES' "TO DO" LIST

- Eat more often
- Eat more at every eating occasion
- Substitute higher calorie foods for lower calorie items
- Build lifting into your exercise routine
- Eat both BEFORE and AFTER exercise
- Eat more EVERY day!
- Eating needs to be a priority, not an afterthought
- Always have food and fluid in your sport bag



**WEIGHT LOSS- DECREASING
BODY FAT**



ISSUES

- Uncomfortable subject for everyone
- Psychological consequences often over shadow physical consequences
- Outcome measurements
- Myths vs reality
- Quick fix
- Athlete's readiness to change
- Understanding that commitment is essential for success
- Goals may be unrealistic with regards to time frame, ultimate body goals



JUST DI-ET

- Dieting may result in:
 - Overeating
 - Undereating
 - Sneaking food
 - Undernutrition/malnutrition
 - Weight gain
 - Set up for failure
 - Disappointment



MOST COMMON WEIGHT LOSS MYTHS

- Carbohydrate foods are fattening
- Glycemic index makes a difference in carb choices
- Eating fat increases body fat
- Eating after 6 will make one fat
- Low-carb foods are fine
- Fat-free foods are fine



CARB VS PROTEIN

- Carbohydrate foods are not as satisfying
- Not usually consumed as a portion
- Most are ready-to-eat
- Many are hand-held foods
- Snacks are usually carbohydrate-based
- Protein foods are filling
- Protein foods are sold as a portion
- Protein foods require preparation
- Protein foods require utensils
- Protein is more part of a meal



RECOMMENDATIONS FOR WEIGHT LOSS

- Body fat assessment is a critical step in determining weight goals
- Fluid and lean mass loss are not desired
- $>1\%$ body water loss can significantly impair strength, speed and stamina
- Aim is to boost metabolism and allow the body to lose body fat



WEIGHT LOSS GOALS

- Inclusive, not exclusive eating pattern
- Need to consume enough carbohydrate for sports
- Can trim calorie contribution from beverages, sweets, chips, condiments
- Portions
- Foods with satiety value (fat, fiber)

Protein Can Increase Satiety



- Consuming more protein, such as whey protein, may help people feel fuller longer than carbohydrates or fat.

- IOM Dietary Reference Intakes for Macronutrients:

- *"A number of short term studies indicate that protein intake exerts a more powerful effect on satiety than either carbohydrate or fat"*

Institute of Medicine 2002, Falton et al, JACN, 2005



STRATEGIES FOR WEIGHT LOSS

- Weight loss goal of 0.5-1 pound per week
- 20% less than calculated TEE otherwise may be performance detracting
- Goal is loss of body fat, NOT fat-free mass
- Smaller, more frequent meals, with breakfast
- Protein as part of every meal/snack results in greater feeling of fullness
- Know what one eats
- Change eating environment (fewer trigger foods)



FOR MAKE WEIGHT SPORTS

- 7-10 days before a competition:
 - Decrease intake of high sodium foods
 - Decrease high fiber foods
- 1 day before
 - Liquid meals



MONITORING

- Record food intake and physical activity online to get an accurate estimate of energy expenditure and energy intake to more precisely determine calorie requirements



FOOD INTAKE

- Athletes need to know what, when and how much they eat before they can successfully modify the eating pattern
- Monitoring is critical, either by hand or on-line
- Monitoring is also a good indicator of the athlete's commitment and readiness to change



BENEFITS OF RECORDING

- Where calories come from
- Number of meals eaten per day
- Snack items
- Difficult times of the day
- Fluid intake



WEIGHT LOSS SUPPLEMENTS

- Chromium Piccolinate
- Ephedra (*Ma Huang*)
- Synephrine (*citrus aurantium, zhi shi*)
- Caffeine (*Kola Nut, Mate, Guarana*)
- TRIAC
- L-Carnitine
- Carb blockers (HCA/ phaseolamin)
- Fat blockers (chitosan)



WEIGHT LOSS SUPPLEMENTS

- Quercetin
- Pyruvate
- Cayenne
- Star Caps
- Dieter's Tea
- Hoodia (TrimSpa)

DIETARY STRATEGIES THAT WORK



- Calories are the **BOTTOM LINE** regardless of the source
- Breakfast eaters do better
- Be selective about carbohydrate choices
- Limit or keep trigger foods out of sight
- Downsize plates, cups and bowls
- Make the words “half”, “share” and “small” part of your eating - out lingo



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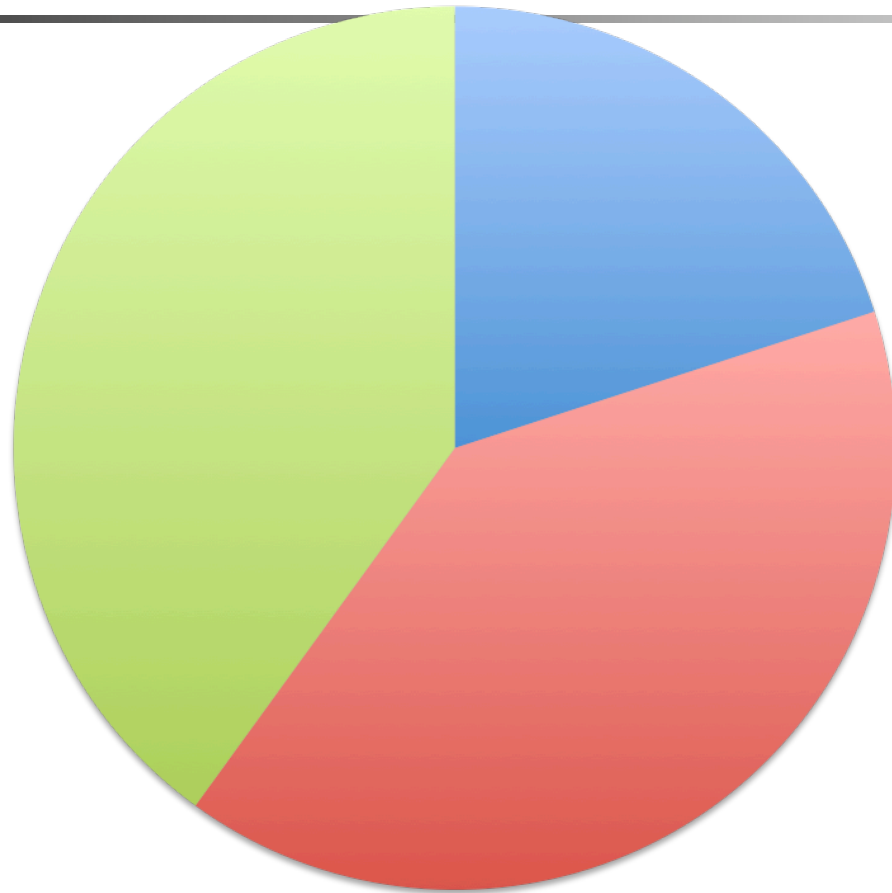


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WANE



-  GRAIN
-  PROTEIN
-  FRUIT/VEG



PLAN OF ACTION

- Identify appropriate weight goals
- Evaluate current dietary/exercise practices
- Establish calorie/macronutrient requirements
- Devise plan for achieving goals based on established needs
- Educate athlete, review diet plan, monitor



NON SCALE OUTCOMES

- Have your athletes keep a measurement chart to monitor body changes
- Ask them what other changes they notice; ie. Strength, stamina, speed, recovery



BOTTOM LINE

- Help athletes to set realistic goals
- Make them accountable
- Monitor progress with regards to performance
- May be necessary to “tweak” the plan to see results
- Emphasize need for consistency for success
- Encourage athletes to focus on what they CAN and WILL do, not what they DIDN'T and WON'T!