

Sports Nutrition

Strategies for Weight Loss and
Muscle Gain

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InTrainingNutrition.com



Body composition

- Describes the amount of fat, bone, water and muscle in our bodies
- Measurements such as BMI, waist to hip ratio and general weight are inexpensive ways to determine appropriate weight and health risk status
- However they do not provide specific info
- Body composition varies greatly between individuals
- Can be influenced by:
 - genetics
 - gender
 - age
 - diet
 - activity



Body Composition

Fat Mass: The portion of your body that is fat. Fat mass includes both fat stored in the fat cells and essential body fat

Essential body fat: Fats found within the body that are essential to the normal structure and optimal function of the body

Nonessential body fat: Fat found in adipose tissue. Also called 'storage fat'

Fat-free mass: The total weight of the body except for its fat. This is mainly made up of skeletal muscle and bone, also includes protein, water, fat free organ weight

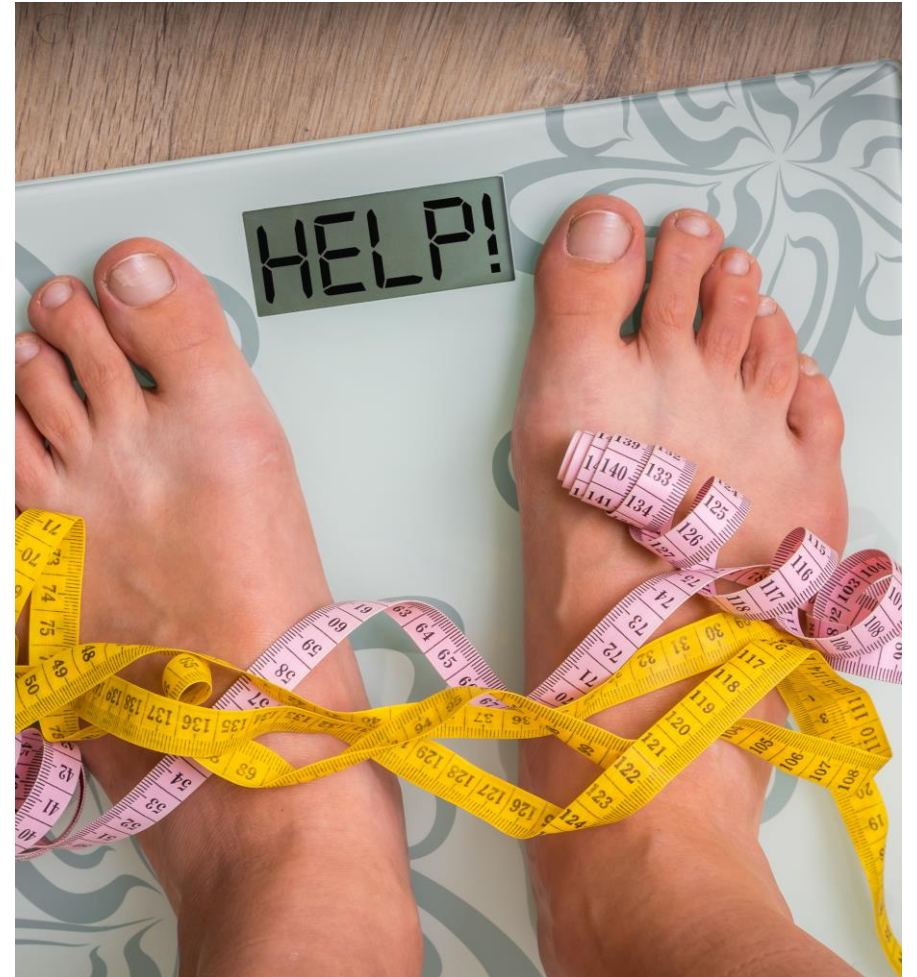
Lean body mass: Portion of the body that consists of fat free mass and the essential fats that include those tissues

Percent body fat (%BF): The amount of fat mass found on the body expressed as a percentage of total body weight

The Scales Don't Tell Us Everything

Scales do not:

- Tell you if your weight is healthy or unhealthy
- Tell you where your weight is - which is the biggest danger
- Account for muscle mass



Percentage Body Fat

- Scales alone does not tell us enough about a persons composition



1 Pound of Fat



1 Pound of Muscle

What is Anthropometry?



External measurement of body composition



Tells you how much of your weight is muscle or fat as a % of you total BW



Measure lean body mass, fat stores and body water



No method is 100% accurate



What is Anthropometry?

Total fat Mass / Total Body Mass

Body Fat has 2 components

1. Essential
2. Stored

% Essential varies with gender

Women 10-13%

Men 2-5%

Stored Fat accumulates in adipose tissue

Numerous methods to measure

Percentage Body Fat Measurement

Skinfold Thickness

Take measurement from 4 sites

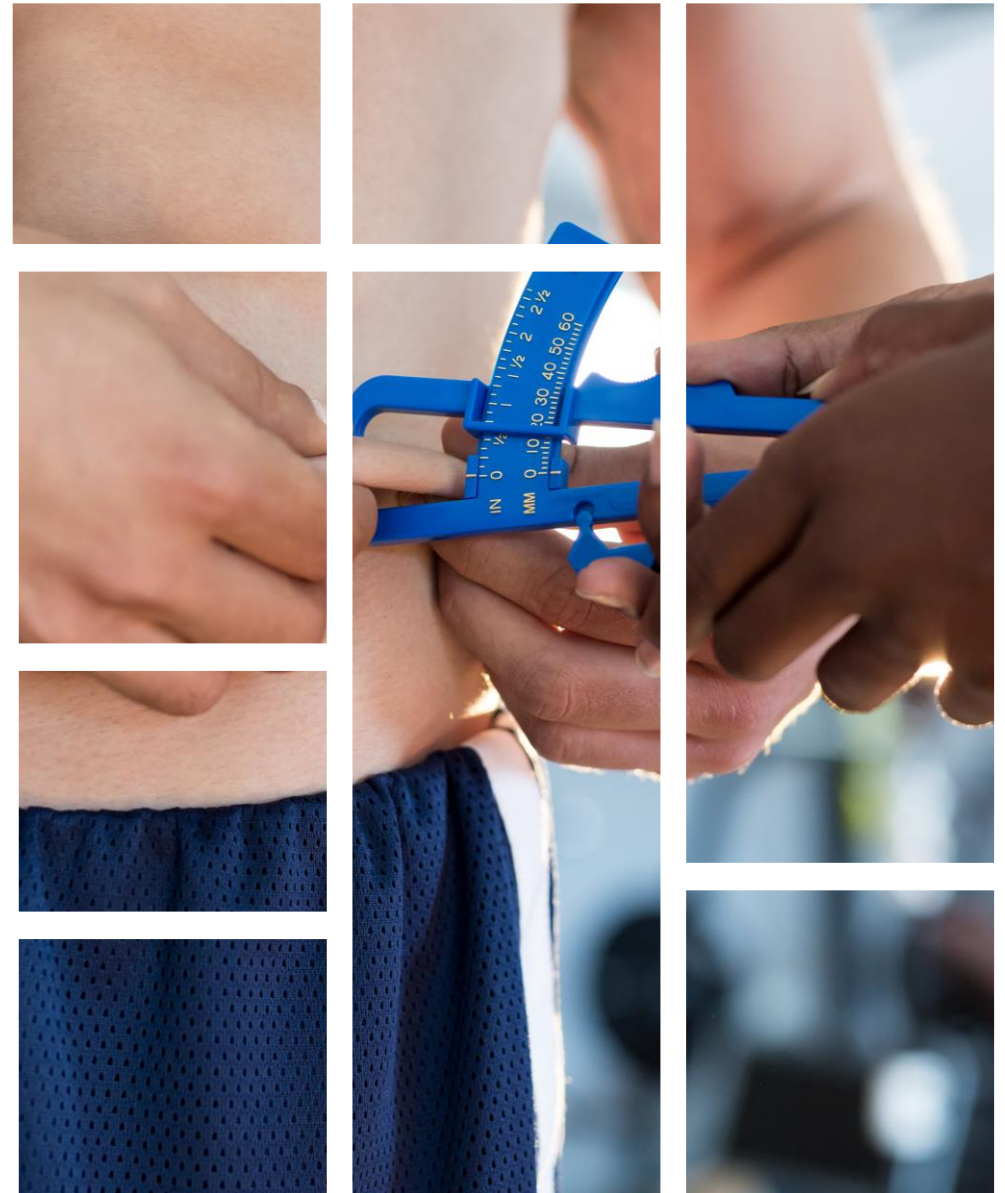
Repeat each site 3 times to get an average

Site 1: Triceps skinfold

Site 2: Biceps skinfold

Site 3: Subscapular skinfold

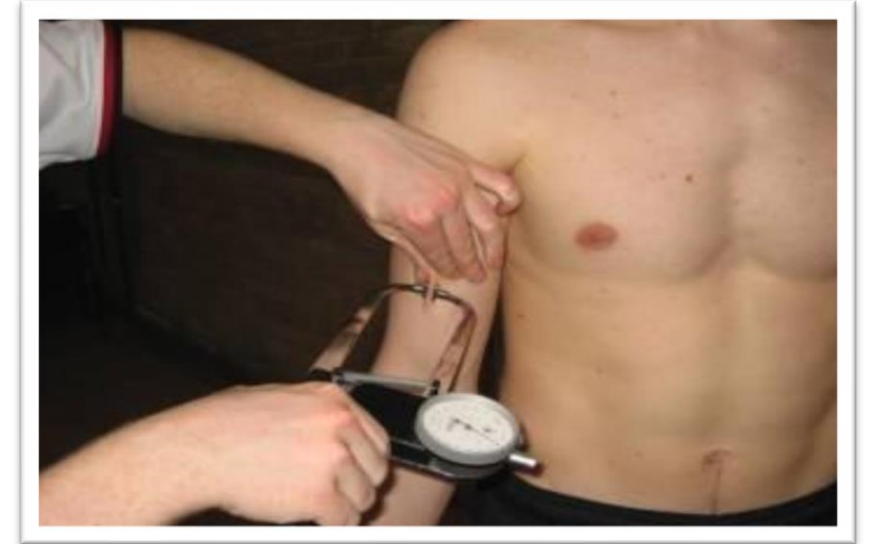
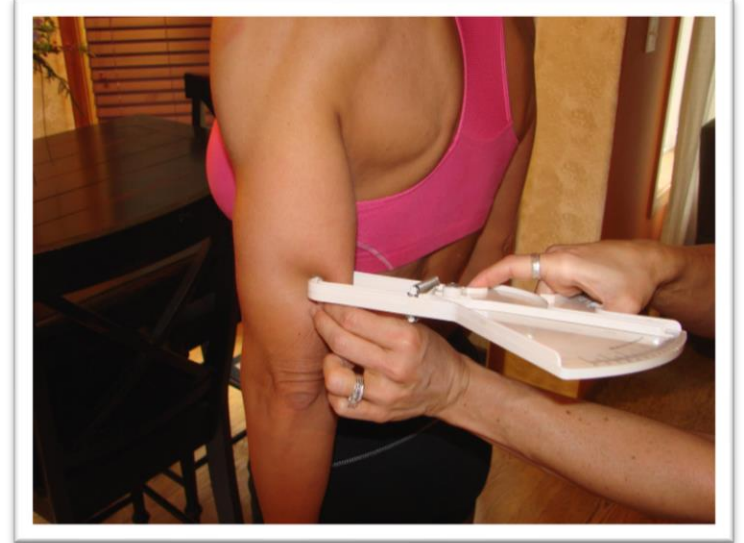
Site 4: Suprailiac skinfold



Triceps and Biceps Skinfold

How to measure:

- Non-dominant arm
- Bend at a right angle
- Find mid-point from elbow to shoulder
- Let arm hang loosely
- Grab skinfold at mid-point level on back of arm over triceps muscle or at front of arm over bicep
- Place callipers on the skinfold below where you are grabbing skinfold
- Take reading
- Repeat 2-3 times and record average

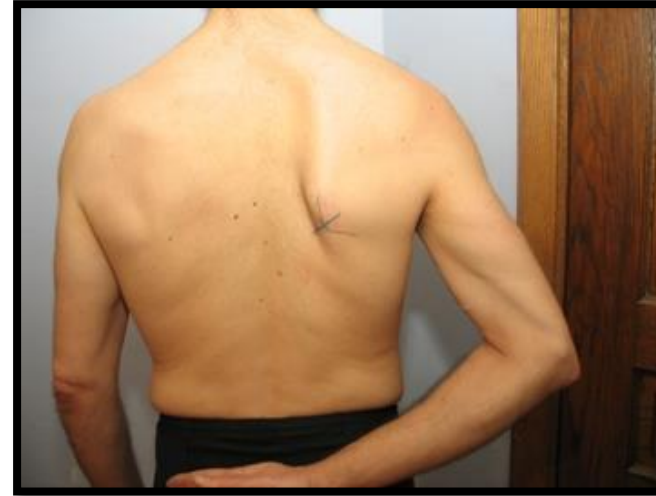


Subscapular and Suprailiac

Subscapular

Where to measure:

Across the back, below the shoulder blade



Suprailiac

Where to measure:

Grab skinfold just above the hip bone



Bioelectrical Impedance Analysis (BIA)

- Widely used in gyms
- Affordable to buy
- Lean tissue contains high levels of water
- Good conductor of electricity
- Fat creates resistance
- Increased levels of fat mass results in high resistance value and therefore high levels of fat percentage
- Accuracy varies



Bioelectrical Impedance Analysis (BIA)

To increase accuracy:

- Avoid alcohol 48 hour prior
- Avoid moderate/vigorous exercise with 12 hours
- Abstain from eating within 4 hours of test
- Avoid ingestion of any diuretics (caffeine)
- Empty bladder prior to assessment



Air displacement plethysmography

- BOD POD
- Accuracy is approx. 97-98%
- Expensive

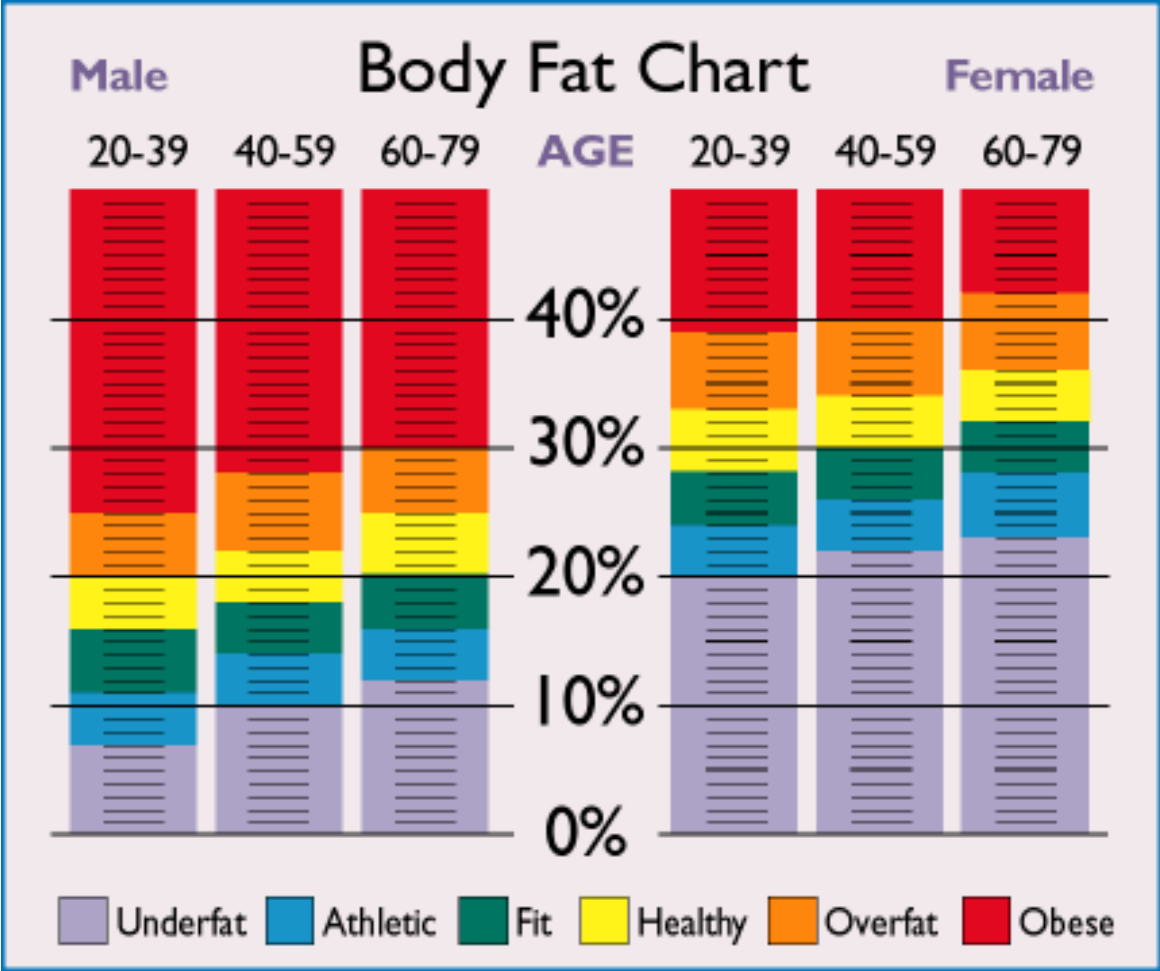


Body composition and Sports Performance

- Desirable BF% will depend on the particular sport
- Some studies suggest:
 - men: 6-13%
 - women: 14-20%
- Optimum BF% depends on the individual



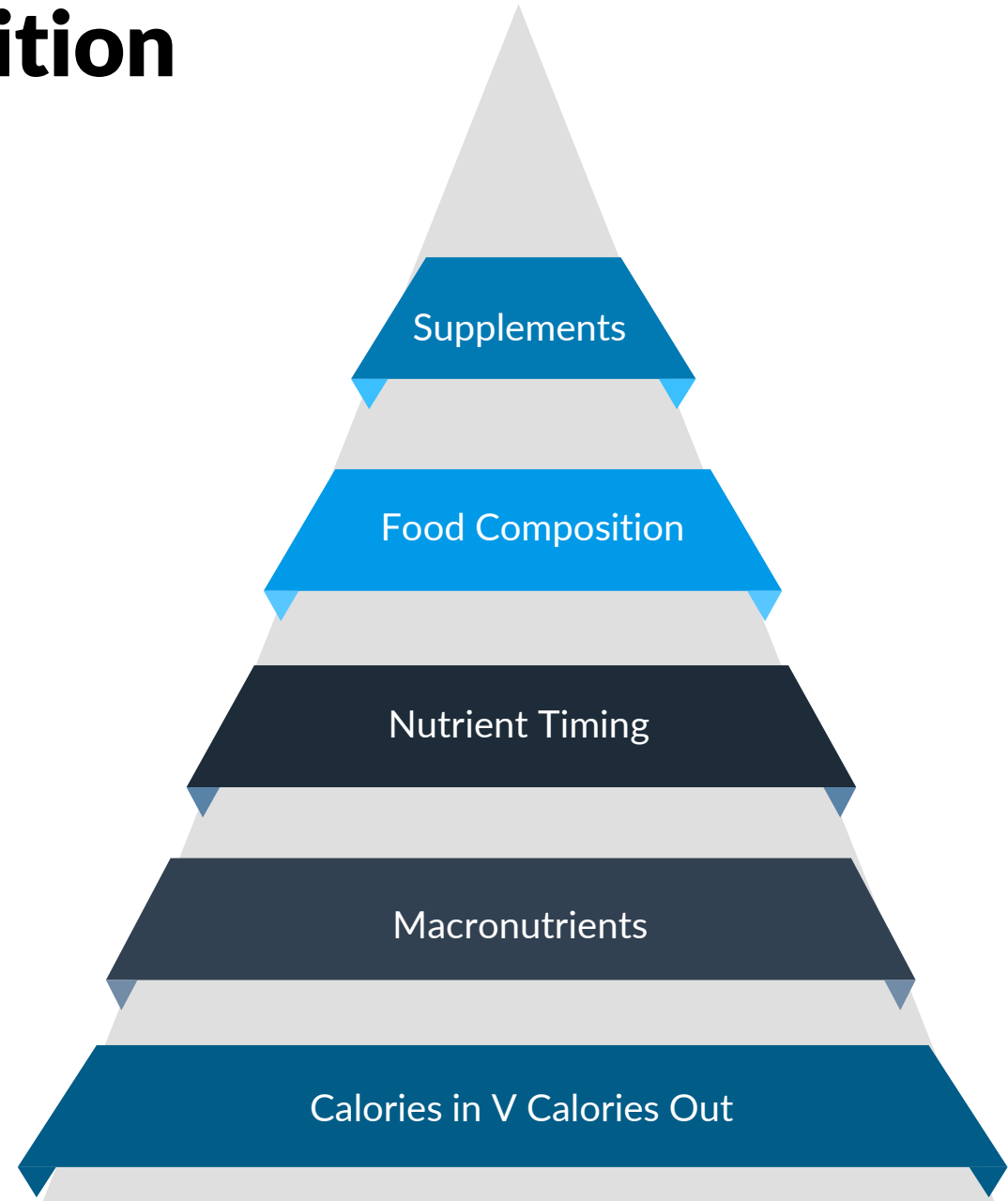
Percentage Body Fat Chart



Body Fat Percentage Categories		
Classification	Women	Men
Essential Fat	10-12%	2-4%
Athletes	14-20%	6-13%
Fitness	21-24%	14-17%
Acceptable	25-31%	18-25%
Obese	32% +	25% +

Importance of Sports Nutrition

- Start with bottom of the pyramid and work your way up
- To maintain, lose or gain weight, the most important factor is calories in V calories out
- Once calories are being tracked correctly, then move to tracking macronutrients.
- Don't forget about the importance of the quality of your food to obtain your vitamins and minerals.
- Supplements are to supplement a diet, not replace it



Weight Loss

- Common aim amongst athletes and exercise enthusiasts
- Rapid weight loss may have serious health consequences
- 'Weight cycling' associated with increased risk of:
 - heart disease
 - secondary diabetes
 - premature death



Weight Loss

- Need to create negative energy balance
- Combination of diet and activity better than one or the other



Weight Loss

Objectives of healthy weight loss:

1. Achieve negative energy balance
2. Maintain/increase lean tissues
3. Gradually reduce BF%
4. Avoid major reduction in RMR
5. Achieve micronutrient requirements



How to achieve negative energy balance:

1. Calculate your RMR
2. Calculate daily energy expenditure
3. Reduce by 500-1000 kcal per day

Should result in weight loss of 0.5-1kg (1-2lbs) per week

Weight Loss

Guidelines:

- Aim for protein intake of 1.6-2g/kg (0.8-0.9g/lb)
- Calculate CHO and fat requirement – then cut them by 500-1000kcal to produce your energy deficient
- Do not skip meals
- Eat 3-6 times a day approx. every 3-4 hours
- Choose low calorie, nutrient dense foods
- Vegetables, fruit, wholegrains, lean meats



Weight Loss

Goal Settings:

- Aim to lose 5-10% of current body weight over 3-6 months
- If you can then maintain this for 3-6 months you can try to lose further weight
- Slow, gradual weight loss better for health and more likely to target fat instead of muscle mass
- Monitor weight every 2 weeks
- Monitor body composition every 4-6 weeks
- Never consume fewer calories than your RMR



Weight Loss

- ✓ Energy deficit
- ✓ Introduce dietary changes
 - aim for food that fill you (high fibre/protein)
- ✓ Adequate protein
- ✓ Cut out processed refined foods
- ✓ Control your portions
- ✓ Eat regularly
- ✓ Meal plan
- ✓ Don't deprive yourself!
- ✓ Consistency is key





Weight Gain

- Lean weight gain can be achieved with a well planned resistance training programme and a well balanced diet
- Both required to increase lean mass
- Not only gain weight but increase strength



Weight Gain

3 main requirements:

1. Resistance training
 2. Positive energy balance
 3. Positive nitrogen balance
- Calorie intake must exceed output
 - Must be gradual or else it may result in fat gain



Weight Gain

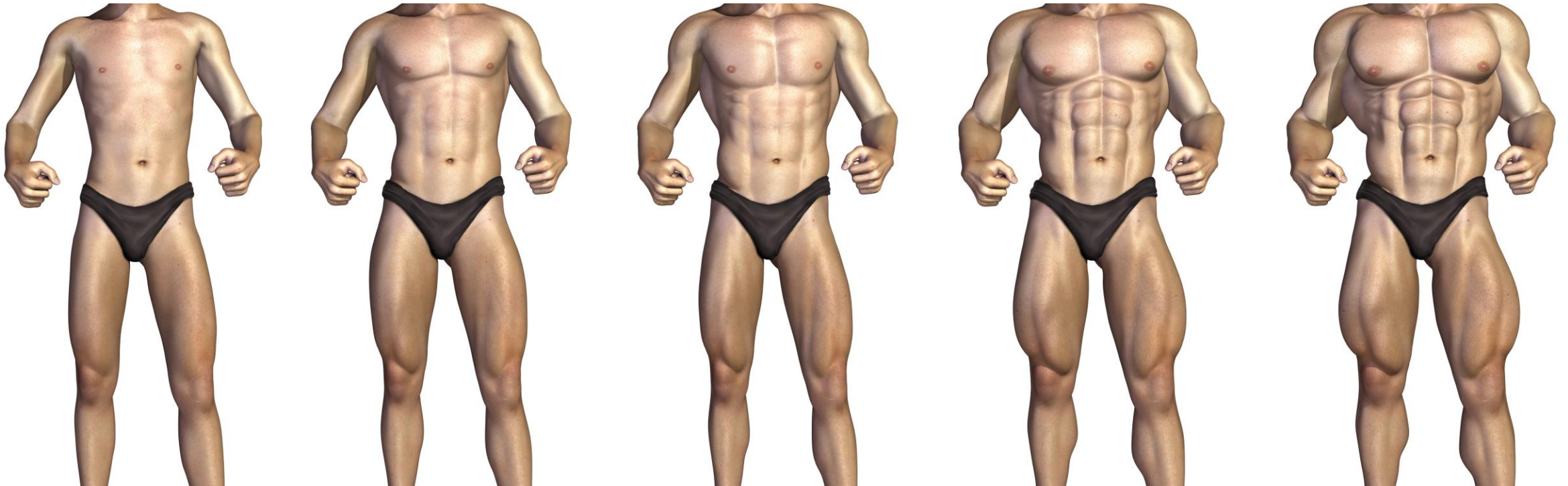
Weight gain of 0.5 – 1kg (1-2lbs) considered appropriate

Amount of calories required to do this depends on:

- Goals for rate of weight gain
- Intensity and volume of training
- Ability to consume extra calories
- Genetics

Weight Gain

- Majority of extra calories should come from CHO in order to keep body fuelled
- Aim for 1.8-2.0g/kg (0.81-0.9/lb) protein per day



Weight Gain

Tips for healthy weight gain:

1. Consume extra calories in fluids: smoothies, shakes etc
2. Avoid carbonated drinks
3. Don't wait for hunger to eat
4. Eat small, eat frequent
5. Eat variety of nutrient dense foods
6. Consume sports drinks during training
7. Always consume post workout snack



How to achieve positive energy balance:

1. Calculate your RMR
2. Calculate daily energy expenditure
3. Increase by 300-500 kcal per day

Should result in weight gain of 0.5-1kg (1-2lbs) per week

Weight Gainer Shakes

Classic calorie load

	CHO	PRO	FAT	Calories (kcal)
Full fat milk (100ml)	4.6	3.3	3.25	62
Greek style natural yoghurt (150ml)	5	11	8	130
Honey 2 tbsp.	34	0.2	0	132
Peanut butter 4 tbsp.	12	16	32	400
1 banana	27	1.3	0.4	105
Blueberries (30g)	10	0.5	0.2	38
Oats/porridge (40g)	26	4.5	2.6	148
Total	119	37	46	1015

Weight Gainer Shakes

Dairy Free

	CHO	PRO	FAT	Calories (kcal)
Coconut milk (100ml)	2.8	2	21	197
banana	27	1.3	0.4	105
Raspberries (60g)	7.2	0.72	0.4	32
Almonds (50g)	11	10.5	24.5	288
Cashews (50g)	15	9	22	277
Pumpkin seeds (30g)	16.2	5.7	5.7	134
Total	79.2	29	74	1033

Weight Gainer Shakes

Green gains

	CHO	PRO	FAT	Calories (kcal)
Greek style natural yoghurt (150ml)	5	11	8	130
Apple	25	0.5	0.3	95
Avocado (200g)	18	4	30	320
Spinach (100g)	3.6	2.9	0.4	23
Broccoli (100g)	7	2.8	0.4	34
Flaxseeds seeds (50g)	14.5	9	21	267
Sunflower seeds (30g)	5	5.6	15.8	171
Total	82	39	76	1040

