Obesity
2 Common Causes
Overfeeding and Inactivity

Diseases associated with obesity in dogs and cats include
Diabetes, High Blood Pressure, Neoplasia (tumors), Impaired immune response, Pancreatitis, Liver disease, Urinary Stones, Arthritis, Respiratory and Cardiac Disease, Skin diseases , Anesthesia-Surgical complications and Exercise Intolerance

Risk Factors for Obesity include: Neutering, Low Activity, Middle Age, Ad Libitum Feeding, High Fat Diets and Indoor life

Overweight middle age (8-12yrs) cats are 3 xs as likely to die as optimum weight cats.

Obesity is considered an inflammatory disease!
Fat Cells secrete proinflammatory substances including Tumor Necrosis Factor(TNF), Interleukin 6 , Leptin plus other substances that stimulate inflammatory cells , alter metabolism to increase insulin resistance and cause oxidative stress leading to chronic diseases

Neutering and Spaying: these procedures which we all realize are necessary reduce the Daily Energy Requirements (DER) of our patients by 20-30%
We Must Reduce Calories after Spaying and Neutering

This association with neutering may be related to removal of reproductive organs (not making eggs or sperm) or due to lack of reproductive hormones affecting the thermogenic activity within the liver. The mechanism remains unclear but the effect is clearly seen.
Dogs and Cats that are spayed and neutered get Fat! We must educate our clients to help prevent this.

We use the Body Condition Score System to evaluate the percentage of Body Fat in our patients

1= underweight (cachexic)	% body fat = < 5%
2= underweight	% body fat = < 6-14%
3= Ideal	% body fat = < 15-24%
4= Overweight	% body fat = < 25-34%
5= Obese	% body fat = < 35-45%

Animals with a body score of 4 are at least 15% overweight
Animals with a body score of 5 are at least 20-25% overweight

Cats and Carbs The Atkins Diet

The theory - Low carbohydrate diets shift metabolic drive from glucose oxidation to fat metabolism as the animal's primary energy source.
That is it forces the body to use Fat as the primary energy source instead of glucose.

Low carb intake results in lower plasma glucose concentrations and limited insulin secretion
Cats and Carbs: Cats were never really meant to eat carbohydrates.
Cats originate from the Nile River region of Africa and the Middle East (Desert Animals)
No Amylase to digest fiber and carbs in saliva (like dogs and people)
Cats have enough glucose in their diets to meet their essential needs of their Red Blood Cells, Renal Tissue (medulla) and Central Nervous System (The only organs that require glucose)
Once this requirement is meet excess glucose is readily converted to Triglycerides and stored as fat!

High Carb Diets causes blood glucose to rise, Insulin is increased and glucose enters fat cells and is converted to more fat.
Low carb diets cause low glucose and insulin levels which makes storage of fat difficult.
Low insulin causes C-amp levels in fat cells to increase which causes levels of Lipase to increase causing Fat breakdown

Why do diets fail?
Set points for innate body fat % influenced by genetic makeup and Leptin levels.
Fat store low – Leptin low. Low Leptin causes increased levels of Neuropeptide Y
Neuropeptide Y stimulate appetite
Opposite also true increased body fat causes increased Leptin levels which decrease Neuropeptide Y which decreases appetite.

Very hard to change innate levels. Must start when young!

Non –compliance- Major cause for failure for both pet and owner
Pet set point drives appetite (begs when on diet)
Owners have social and psychological factors which cause diet failure.

Need to rule out disease state causing obesity (Hypothyroidism and Cushing's syndrome)

Inaccurate estimation of Ideal Body Score (weight) Be Tough- Give Accurate Body Scores (have owner score BCS, usually more accurate then vet staff, sad but true)

Pet Food feeding guidelines have always been way too high! Anywhere from 1.4-1.8x the maintenance requirements. These basic energy requirements were established in kennel situations which are very stressful on the dogs and cats, stressful environment leads to higher energy requirements.

Some obese inactive cats need only 39-66kcal/kg per day. If we reduce these cats caloric intake by 30% from the recommended 70kcal/kg/day we are still feeding them 49kcal/kg/cat if they only need 39kcal/kg/day there is no way they will loose weight. The maintenance energy requirements of these inactive cats may be very close to their resting energy requirements.

Tips for Success
Use Slim Fast Medi-cal Program
Weight maintenance is a life long commitment. Have owners start food diary.
Better approach (my way also) Restrict calories by 20% right off the bat!
1-2% body weight loss per week in dogs, 0.5-0.8 in cats
Reduce calories by 10% per week if no weight loss noted
Small frequent feedings
Increase in dietary fiber (prescription foods) some respond to high fiber. The fiber increases dietary bulk (feel full), dilutes calories and promotes sense of satiety

Increase Exercise: Cats need 10 minutes of play time to induce caloric burn and to help loose weight.
Dogs need a 30 minute (continuous) walk to burn calories and loose weight.

Goal: Start body scores in all kittens and puppies
Advise all new kitten owners to provide both canned and dry food
Educate all owners to reduce calories by 20 %(female) to 30 %(male) after spaying and neutering.

Refer to http://www.vet.ohio-state.edu/2361.htm to help cat owners who are switching diets to help make the process successful.