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## ADVANCES IN THE MANAGEMENT OF OBESITY IN DOGS

Ian Ramsey\* BVSc PhD DSAM DipECVIM-CA FHEA MRCVS  
Shelley Holden VN APHC MBVNA

\* Small Animal Hospital, University of Glasgow, Bearsden Road, Bearsden, Glasgow G61 1QH  
[I.Ramsey@vet.gla.ac.uk](mailto:I.Ramsey@vet.gla.ac.uk) 0141 330 5848

† Small Animal Hospital, Department of Veterinary Clinical Science, University of Liverpool, Leahurst, Neston Cheshire [shelleyh@liverpool.ac.uk](mailto:shelleyh@liverpool.ac.uk) (0151 795 6100)

### INTRODUCTION

This article gives a short overview of the management of obesity in dogs and tells you more about the recent introduction of anti-obesity drugs. It is the authors' opinion that no weight control programme in a veterinary practice can succeed without the active help of veterinary nurses. This article will help you understand the important principles underlying such a programme and answer some questions about setting up such a programme in a practice.

#### **When is a dog overweight and why is this a problem?**

Obesity is "an accumulation of excessive amounts of fat": but what do we mean by 'excessive'?. The answer is that the term obese should be reserved for those cases whose current weight is 30% above their ideal (animals are termed overweight if they are 15 to 30% above their ideal). The ideal weight for specific breeds can be found on several charts, however for cross bred dogs the ideal weight simply has to be estimated

Dogs that are overweight are at increased risk of a variety of associated diseases such as diabetes mellitus, certain cancers and arthritis as well as having a reduced overall life span. Recently a study demonstrated that a group of Labradors fed *ad libitum* had a shorter average life span (11.2 years) than a control group (13 years) who were fed three-quarters of what the other group ate. Other beneficial effects in the diet restricted group included evidence that they were at less risk of arthritis and diabetes.

#### **How common is obesity?**

The most recent studies in Australia, France, USA and the UK estimate the prevalence of overweight dogs at 29-37% of the pet dog population, whilst 5-15% are judged to be obese. The problem is getting worse.

## **What causes obesity?**

In most animals, obesity is the result of a simple imbalance between energy intake and energy expenditure. Many factors may affect how easily weight is gained; these include genetics, age, neuter status, amount of physical activity, and the energy content of the diet – not forgetting titbits!. In comparison with ‘simple’ obesity, medical causes such as hypothyroidism and hyperadrenocorticism, are comparatively rare (typically <1% of the overweight dog population). If owners tell you that their dog, besides being hungry is also excessively thirsty (or has any other signs of Cushing’s disease) or lethargic (or has any other signs of hypothyroidism) then further investigations such as an ACTH stimulation test or measuring T4 and TSH may be needed. Sometimes these signs only become apparent to the owners during a weight loss programme. After dogs have started treatment for a medical cause of obesity they usually require a weight loss programme.

## **OVERVIEW OF TREATMENT OF OBESITY IN DOGS AND CATS**

The key factor in determining the long term success of any treatment for obesity is owner motivation and support. Veterinary professionals play a significant role in helping to provide and maintain owner motivation and support but in so doing must examine their own commitment to the treatment of an obese patient.

Until recently, the optimum therapy of canine obesity was a combination of dietary management, behavioural modification and exercise (Figure 1). No single element of this combination will succeed in achieving long term weight control: a combination is required. Recently, two new drugs have been authorised in the UK for the treatment of obesity in dogs. The new drugs represent a new element in the therapy of obesity but, like the other elements, they will not succeed unless they are part of a combination therapy.

The best way of delivering obesity treatment is by means of a specific weight loss programme. Some practices provide weight loss programme in the form of Slimmer’s Clubs or Weight Management Clinics.

## **OWNER MOTIVATION AND SUPPORT**

### **Why is owner motivation and support the most important factor in the successful treatment of obesity?**

Owners and their families and friends are the *only source of energy intake* for most pet dogs. They are also the source of most additional energy expenditure above the basic maintenance. Owners need to have short term motivation and support to retain any hope of successfully reducing their dog’s weight.

Owners also need to have support in the longer term. Maintaining weight loss requires as much effort as achieving the initial loss. About 50% of dogs that successfully lose weight then put the weight back on within a few months – losing all benefit from the efforts of their owners. Weight loss can only be the start rather than the end of the treatment for obesity.

It is essential to continue to monitor body weight after the ideal weight has been achieved to ensure that weight that was lost is not regained; as with humans, a rebound effect has been demonstrated after weight loss in dogs.

### **What happens if owners do not have enough motivation and support at the start?**

Owners of overweight dogs who attempt to reduce their dogs weight and then fail (either because of a lack of support or because of a lack of their own motivation) are *less likely to attempt to diet their dogs again and are more likely to give up again if they do try*. It is better for a dog not to be dieted by their owner than for the attempt to be half-hearted. Veterinary professionals (nurse or vet) giving brief or inconsistent advice on the treatment of obesity in a dog during a routine visit for a health check or a booster vaccination, will probably reduce the prognosis for successful dieting in the future. This may reduce the likelihood of owners seeking assistance when they do require veterinary help. Making such comments is often viewed as ‘doing no harm and may do some good’ however in reality it is actually likely to make the situation worse. If a dog is obese then the owners should be informed of this observation with some tact and sufficient time then allowed to discuss a weight control programme fully or specific arrangements made for a follow-up appointment. If, after discussion, the owner expresses an interest in a weight loss programme for their dog, then this has to be provided in considerable detail and actively monitored otherwise failure is more or less guaranteed thereby harming future chance of success. The clinical observations and advice given to the owner should be recorded in the clinical notes.

### **How can veterinary nurses motivate owners – and what can de-motivate them?**

Owners are not generally motivated by the observation that their pet is overweight or obese. Weight reduction for the sake of weight reduction offers little motivation for many owners. An alternative goal for the owner/pet, such as increased exercise tolerance, decreased panting or reduced dependence on NSAIDS for pain control, may be far more effective. Owners may need some assistance in identifying that specific goal. Weight loss is then the method by which this goal will be achieved. Dedicated staff members with expertise and training in owner counselling, as well as allocated time for this activity, achieve higher rates of success than other members of staff. In the authors’ opinion, regular monitoring is the single most important component to the weight loss strategy. A recent study has demonstrated that weight loss is more successful if an organised strategy is followed with regular weigh-in sessions. Weight control programmes should be fun for

the owners and pets. Examples of how to make these programmes fun include the use of feeding balls (see photo), sponsored slimming and “slimmer of the month” competitions.

### **What about your own motivation?**

It is important that veterinary nurses get a sense of fulfilment/achievement/success from a weight control programme – otherwise the programmes will fail quicker than you can say “no titbits”. What factors make you think that a programme has been successful? A happy client? A slim dog? A lot of impressive looking paperwork? There is a real risk of running a beautifully documented programme characterised by lots of happy fat dogs regularly coming in to be weighed without ever actually losing weight all. These questions may seem glib but it is important that you set your own goals for your programmes and you know what exactly you are trying to achieve. A programme that has only a few animals on it, but has a 50% success rate, is more sustainable and a better use of your time, than a ‘successful’ programme with lots of clients but a 5% success rate (even though the numbers of patients that actually lose weight may end up being the same). Owners of animals on a weight loss programme should be made to feel ‘special’ – for example by a membership card or a specific clinic time – rather than ‘guilty’. Owners can also benefit from a support network built up amongst themselves.

Animals with health issues such as orthopaedic problems or heart disease which are directly worsened by obesity may require a weight control programme as a matter of high priority. However, in some mild cases owners may decide not to join the programme immediately. Alternatives for owners that are not ready to start their dog on a weight control programme include simply monitoring the weight on a regular basis every three months (and without charge to the owner). This shows the owner that you have noticed the situation and are concerned. It will also allow you to demonstrate a trend to the owner that can then be used to encourage the owner to take their pets obesity seriously.

## **DIETARY MANAGEMENT**

### **What should obese dogs be fed?**

Experimentally, it is possible to get dogs to lose weight quickly (1.3-2.6% of body weight per week) if you feed them 50-87% of their normal energy intake. However, in a recent University of Liverpool study, clients were asked to reduce their own dog’s weight and the figures were not so good. It was found that, even though they were given lots of support, and some appropriate diet food free of charge and supposedly only half their normal energy intake, they only achieved much slower rates of weight loss (about 0.35-1.56% of body weight per week). This means that some of the published figures, for how long it will take you to get a client-owned dog to lose weight, are likely to be overly

optimistic in the real world. An acceptance of this fact at the start will reduce your frustration and help you to help the owner better. This study also shows just how severely the energy content of the diet needs to be restricted to have any hope of the dog losing weight. Interestingly, a significant numbers of owners confessed to not following the prescribed diet despite all the efforts of the team from the university. Weight loss programmes require a big effort from both nurses and clients. If only one side is putting in the effort, the programme will be likely to fail and probably should not even be started.

Weight loss programmes should be designed for the individual patient. It is preferable to select purpose-formulated diets for obese patients as these are restricted in fat and calories, whilst being supplemented in protein and micronutrients. Protein supplementation is important to reduce the loss of muscles mass during weight reduction. Supplementation of micronutrients ensures that deficiency states do not arise.

### **What about high fibre foods?**

The role of dietary fibre is particularly contentious in this respect. Under certain conditions in humans, dietary fibre has been shown to exert a satiety effect, although some studies have failed to detect significant reduction in appetite. There are similar discrepancies in canine studies with some, but not all studies suggesting effects on satiety. However, recent studies suggest that diets supplemented in both protein and fibre have the greatest satiating effect, and may improve compliance with conventional weight loss programmes.

## **BEHAVIOURAL MODIFICATION**

### **How should we stop the dog from begging?**

A major hurdle in conventional weight loss programmes is the fact that energy restriction causes hunger, leading to increased begging and scavenging activity. This puts increased strain on the owner-animal bond, causing owner non-compliance or complete withdrawal from the programme. Developing strategies to improve satiety and / or reduce begging will greatly increase the chance of success. Simple behaviour modifications such as feeding the dogs in a different room, excluding them from areas when human food is being prepared, never feeding human food, never feeding treats or titbits are vital, but owners require a lot of support and encouragement to achieve this. The advice to feed a carrot or give an ice cube to the dog is well intentioned but often wrong. Whilst the calories provided may be negligible it still provides positive re-enforcement for the begging behaviour and therefore prolongs the problem without lessening its intensity. If treats have to be given then it should be taken out of the daily ration. If a dog begs for food then owners should be encouraged to do something with the dog that does not involve feeding. This might include positive rewards such as grooming, a short walk or a play session. Do not suggest negative

rewards for begging behaviour. Providing the response is consistent, short-lived and never associated with feeding, the dog will learn that the begging behaviour will not lead to the presence of food. It is important to warn the owner that because the begging, pestering or barking behaviours have worked before for the dog, then the dog's behaviour will initially intensify. However if the distractions are maintained by the owner then the begging behaviour will gradually decrease. A dog only needs a very small amount and frequency of rewards that involve feeding to keep begging. A 90% success rate of not feeding in response to begging is not good enough – and owners have to be told this. For some dogs 98% is not good enough though such cases are rare. Written instructions to the owner are vital – the owner will be rarely the only person who may feed the dog.

## **EXERCISING**

### **Can exercise help?**

Increasing physical activity is a useful additional tool to reducing the excessive energy intake by both consuming energy and providing an alternative to feeding. Exercise in humans promotes fat loss, whilst preserving lean tissue during weight loss. The exact programme must be tailored to the individual and take account of any concurrent medical concerns. Suitable exercise strategies in dogs include lead walking, play-activities, swimming, hydrotherapy and treadmills. Activity monitors (accelerometers, pedometers) have recently been validated for dogs, and may help to provide a more objective assessment of activity during weight loss programmes in the future.

However, simply increasing exercise for the normal pet without restricting energy intake will not cause a weight loss. This is because the amount of exercise required to burn up even modest amounts of calories is huge. The often quoted maxim of “a mountain climb to burn up one extra meal” is not far from the truth. Exercising a pet provides an alternative interaction for the owner to feeding, thereby helping to maintain the animal-owner bond. – The biggest value in exercising dogs is to provide an alternative interaction to feeding to maintain the animal-owner bond.

## **ANTI-OBESITY DRUGS**

### **What about using drugs?**

Recently, two drugs have been released to help treat obesity in dogs. Both drugs are microsomal triglyceride transfer (MTP) protein inhibitors. They stop fat from a meal getting into the blood leading to an accumulation within the intestinal epithelial cell. This is thought to lead to an increase in a hormone that tells the brain that the intestines are full and therefore to stop eating (see box 1). Energy intake is, therefore, primarily decreased by reducing appetite. This makes dogs beg less

frequently for food. In addition there is a decrease in fat absorption (and therefore less energy intake) but other nutrients are unaffected.

### **Which drugs are available and how are they used?**

*Dirlotapide* (Slentrol; Pfizer) is authorised for the management of overweight and obese dogs for periods of up to 12 months. Initially a low dose is administered, doubled after two weeks and then the dose is adjusted according to individual response. If the body weight loss does not meet the average rate of weight loss of about 0.75% of starting body weight per week the dose is increased. Significant weight reduction can be achieved during the time in which the drug is used, in many cases enabling the dog to reach target body weight.

*Mitratapide* (Yarvitan; Janssen) is a similar drug but is authorised for a shorter, but more intense, protocol in conjunction with dietary management and behavioural modification. Mitratapide is administered for two 3-week periods interrupted by a 14-day period off the medication, when dietary adjustments are made. According to the manufacturer's data, the product can lead to a 5-10% reduction in body weight during such a protocol. If further weight loss is required to reach target weight, a diet-oriented programme is implemented.

### **What are the problems with these drugs?**

These drugs should not be used in pregnant dogs, or those that are less than 18 months of age or in dogs that are obese due to medical illnesses. *Do not use these drugs in cats* due to risk of hepatic lipidosis. Both drugs are generally well-tolerated by most dogs. However gastrointestinal side-effects, most notably vomiting but also diarrhoea, can occur. These effects can be seen in up to 20% of patients but typically they only occur infrequently in the individual patient and generally during the first few weeks of administration. If owners are forewarned that it may occur, then it is usually better tolerated.

Reversible decreases in biochemical results may occur but these are minor. In addition, some owners report the reduced appetite as a concern, since it changes the interaction they have with their pet; most notably, their dog may be reported to be less affectionate because of the decrease in interaction with the owner through begging.

### **What should the dog be fed whilst on these drugs?**

Alongside the drug therapy, it is essential that a complete nutritionally-balanced diet, is fed, which will ensure that deficiency states do not arise. MTP inhibitors are less effective when fat is overly restricted (less than 5% as fed?dmb?or /100kcal?) therefore some of the more severely restricted diets may be less suitable.

These drugs have been proven to produce steady weight reduction, over a period of weeks, and can therefore provide a positive reward and sense of achievement for owners and thus enhance

compliance with other measures. Nevertheless, shortly after the drug is discontinued, appetite will return and, unless other strategies (feeding and behavioural) are implemented, a rapid and predictable rebound in body weight occurs. Thus, other strategies are essential to ensure long-term success.

## **WEIGHT LOSS PROGRAMMES**

### **Do you have an agreed practice policy on weight loss programmes?**

Conflicting messages can do more damage than no messages and will cause client confusion. It matters less what the practice policy is, than making sure it is effective i.e. that dogs that are put on weight loss control programmes do actually end up losing weight. A strongly-worded policy, e.g. “we will diet all obese dogs”, if not properly followed, will lead to a sense of failure amongst the practice staff and yourself.

### **Which owners do you persuade to join a weight loss programme?**

Is the client going to be able to come back on a regular basis – at least every 2 weeks for the length of the weight loss programme. How do you assess the owner’s level of concern and motivation to start and continue with a weight loss programme ? How obese is the dog ? How many people are involved with feeding this dog? If the answers are not encouraging then consider very carefully before you try to persuade that owner to enter into a weight loss programme. If you are not going to persuade the owner then it is better to simply record the observation and that the client has been informed that their pet is obese. A ‘throwaway remark’ (for example “cut the dog’s food down a bit”) might make you feel better but will reduce the chances of success at a later date and may simply upset the client to no purpose.

### **How do you start a weight loss programme?**

Many weight loss programmes are started “on the spur of the moment” e.g. after a consultation for vaccination. Spontaneity may be fun and seems good at the time, but the owner is more likely to give up spontaneously as well. So it can be useful to make the owner specific appointments to return for regular check ups. If they cancel the appointment, this should be followed through to check to see if there are any concerns and if it is possible to arrange another time. If at this time they show lack of interest then you have your answer about how concerned the owner is. If they turn up, then you are hopefully ready for the discussion and have thought about the answers to these questions:-

### **Have you thought of a suitable ‘reward’ for the owner?**

Do you know what will convince the client that they want to diet their dog? It is worth spending some time trying to find out what is it about the dog's weight issue that worries the owner and then think of a reward. Specific targets, e.g. "being able to walk 5 miles for a charity event in 3 months time", are better than vague targets e.g. "get fit" or "lose weight". A *positive message* e.g. "make your dog thinner and enjoy walks with your dog" is better than a negative "your dog will get ill if it stays fat". Dire predictions of illness relating to obesity, that do not come true in the short term, lead to the clients losing trust in you and other nurses. Positive reinforcement is vital: you should be, encouraging the owner all the time. Perhaps your practice could offer some incentives? For example if the dog loses a certain amount of weight over 4 weeks then it could get a small discount in consultation fees.

### **How are you providing support to the owners?**

One vital tool is having a simple set of personalised instructions that can be given to all clients that are on a weight loss programme; these should be type-written on your practice notepaper, in a reasonably large font, and in plain English. Additional literature from any one of several sources is useful, but drug or food company literature is frequently hard to personalise, may be too detailed, and lacks the personal touch that the practice is hoping to provide.

The telephone is much under-used in veterinary practice as a source of encouragement to owners. We all use the phone to answer questions from owners but how many of us use it in reverse? A phone call to an owner – don't wait for them to phone you – can produce significant effects. How are they getting on? Have they had any problems? Owners don't expect it and are usually pleased that you have taken the time to call them. They may be prepared to ask you something, tell you something or chat about something that they are unwilling to do in person in a busy practice environment. If you can make the call towards the end of the working day (i.e. just before most dogs get their main meal) then so much the better. The more contact you maintain with the owner, the more your own personal bond will increase with them and their pet.

Remember that you should take into account the client's concerns and be aware that they may feel embarrassed, worried or guilty about their pet. Never place any blame on the client – just offer more encouragement and support.

### **How are you going to get your message over to owners?**

Getting simple key messages over to owners can take a lot of time. Avoid long explanations punctuated with scientific terminology, vague quantifiers (like "some"), vague uncertainties (such as "likely to") and hesitations (the "err, um" syndrome). Think before you speak, say what you have to say, and then let the owner ask questions. Straightforward mottos like "your dog is the shape you feed it to be" or "a diet is for life (not for just after Christmas)" and "reward begging without giving any food" should be repeated frequently to owners. If you want to find out if your message is

getting home then try this trick. Start saying the motto to the owner during a consultation and then stop in the middle. If the owner finishes it off for you then you have succeeded. Some people have been doing this for years (just think of Bruce Forsyth who always starts a show with “nice to see you to see you.....”).

### **How long does a weight loss programme take?**

A weight loss programme takes as long as necessary to reduce the dog’s weight to its target. The owner must be counselled that the dog will always be prone to obesity and that therefore the dog will always need to be monitored and will never be allowed to eat as much as it does currently.. Owners need to be advised to continue to weigh food to monitor intake, to continue to refuse to give treats, and to maintain an exercise plan.

It is important to inform owners how long a weight loss plan is likely to take as this can be between 3-12 months (sometimes even longer) and will depend on the degree of obesity at the start and the rate of weight loss during the diet period. If owners have a good idea of the amount of time it will take they will find it easier to accept a slower rate of progress. Otherwise they are likely to become very disappointed when the animal hasn’t lost very much weight after a short period of time.

### **How often should the weight be monitored?**

Changes in body weight take a long time to occur during treatment. There is little value in monitoring more frequently than every 2 weeks.– and once the target weight has been achieved then the frequency may be reduced slowly to once monthly and then every 3 months as long as the weight loss is maintained. If the weight starts to be regained then the frequency of monitoring should be increased again to once every 2 weeks. Owners may be able to do the monitoring at home depending on the size of the dog.

### **SUMMARY**

The authors hope that this article will help you tackle obesity in your patients with renewed enthusiasm and knowledge. Not all of the ideas in this paper may be relevant, practical or appropriate in your practice but if just some are useful and you put them into practice then the battle against the most common health care problem in dogs in the western world will have been moved forward. Please contact either of the authors by phone, email or letter if you need any advice or have practical ideas that have worked for you in your practice.

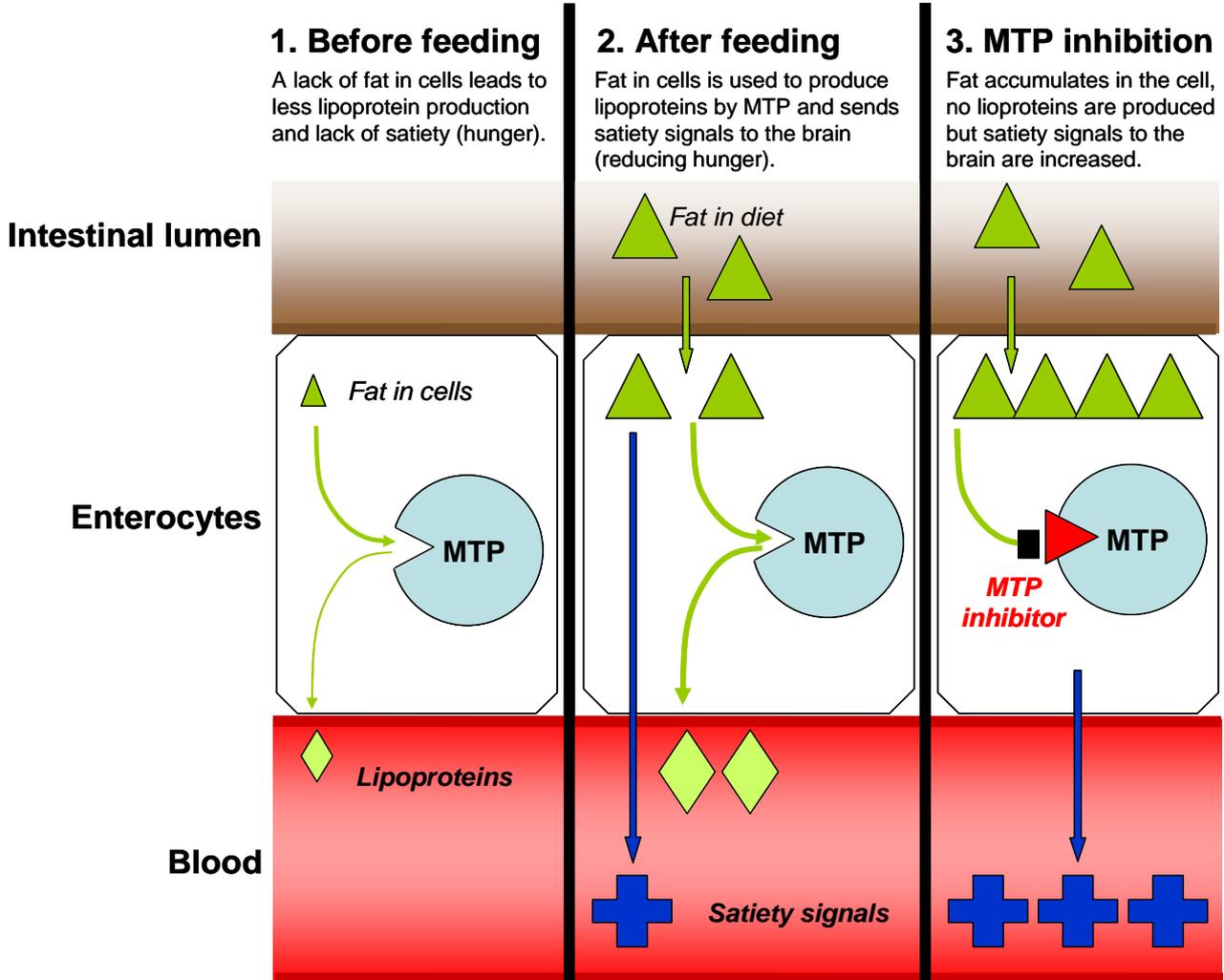
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### Box 1 The actions of MTP inhibitors



**Figure 1**

Pictures of an 18-month old neutered female Corgi pre- (a,b) and post-weight loss (c,d), on a high protein high fibre weight loss diet. The dog lost 40% of starting body weight, at a rate of 1.4%/week.

a)



b)



c)



d)



**Figure 2**

Some owners and dogs enjoy using these food balls. A small amount of food is taken out of the daily ration and placed inside the ball.



**Figure 3**

Exercise is beneficial for many overweight dogs.

