



# TPLO HOME RECOVERY PROGRAM

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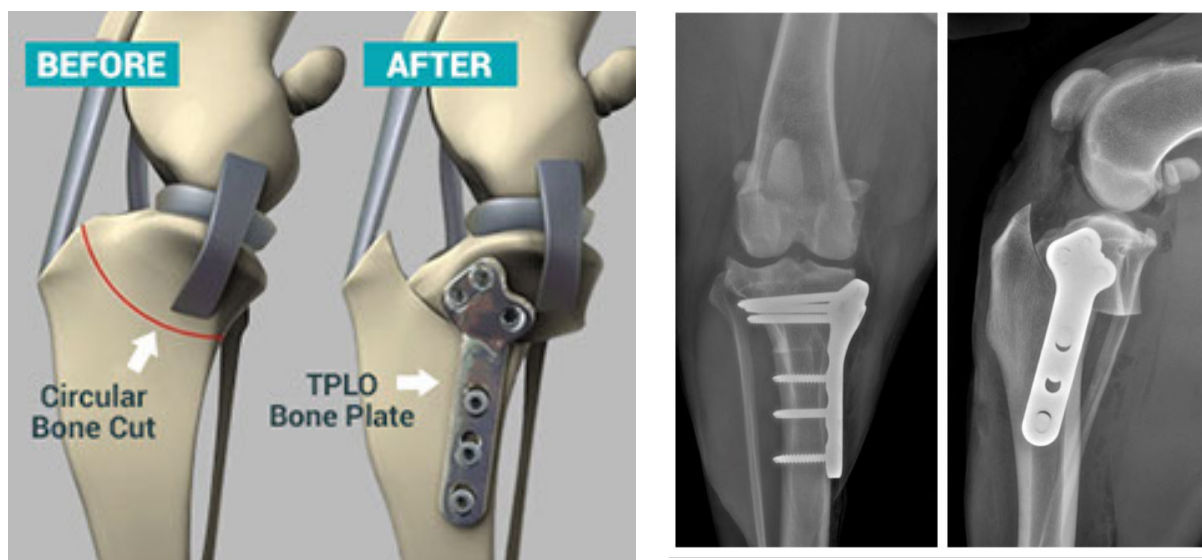


# The Cranial Cruciate Ligament (CCL)

There are a number of ligaments in a dog's stifle (knee) that contribute to joint stability. The Cranial Cruciate Ligament (CCL) is the primary ligament responsible for limiting "cranial drawer" motion (excessive forward and backward sliding of the femur on the tibia bone). When a dog has a partial tear or ruptures this ligament, the joint instability causes inflammation and pain which is why your dog favors the leg. Osteoarthritis, also known as OA, degenerative joint disease, or degenerative arthritis, is a form of arthritis caused by inflammation, breakdown, and the eventual loss of cartilage in the joints. There are many factors that lead to the progression of osteoarthritis; failure to stabilize this joint will accelerate the process.

## What is a TPLO?

The TPLO (Tibial Plateau Leveling Osteotomy) is a procedure that neutralizes the effect of this drawer motion. A circular cut is made in the top of the tibia, and the smaller portion of the bone is rotated to reduce the slope of the tibia. A special surgical grade stainless steel plate is used to hold the two bone segments together. Over time, the bone segments will heal together to provide lifelong stability.



**This booklet serves as a guide during the important post-operative healing period following your pet's TPLO surgery. Included in this booklet is a week by week recovery schedule along with visual aids and descriptions to help guide you through the various physical therapy exercises. Please follow this program.**

# Preparing For Your Pet's Recovery at Home

## Preparing your Home:

Prior to your pet coming home, you should determine where you are going to confine your dog during this post-operative period. Making your dog as comfortable as possible is as important as having a good rehabilitation program. As your dog's mobility is to be restricted, we recommend that you utilize the following:

- A dog crate that is large enough that your pet can stand up and turn around
- A gated off area such as a kitchen or bathroom
- Confinement to a room

Surfaces such as hardwood floors, tile, linoleum, etc. can be very slippery. We suggest that you place some throw rugs with rubber backing or yoga mats on these surfaces to make it easier for your dog to walk around.

## House Rules:

- **Absolutely NO jumping of any kind!** No jumping on/off the bed, couch, you, in the vehicle, etc. Overextension of the knee could compromise the repair of your dog's leg and delay the healing time. It is also possible for your pet to break and dislodge screws/bone requiring further repair.
- **Stairs:** For the first 2-4 weeks following surgery, stairs should be limited to a short flight to get in or out of the house. Your pet needs to be on a short leash and slowly guided up and down the stairs. If you have stairs in your home, limit your dog's access to them with something like a baby gate to prevent unsupervised use of stairs. Longer flights of stairs should not be used for strength training but are allowed with supervision after 4 weeks post surgery, as long as your pet is consistently using their leg and is not allowed to run or jump up the stairs.
- **No active play!** Refrain from active play with your dog and do not allow him/her to play with other dogs until your veterinarian tells you otherwise (likely after the 8 week post-operative x-rays to confirm bone healing).

# TPLO Home Recovery Program

Uncontrolled pain can slow down the healing process and delay your pet’s recovery. We have supplied medications to alleviate this post surgical pain. It is important that you give all of the medications as directed so that your pet is comfortable. This does not mean that they should have free reign because they “feel good”. Your pet still needs to be restricted to avoid compromising the surgery which may lead to prolonged recovery and potentially additional surgeries. After the surgery, your dog is going to limp on the surgical leg for a period of time. This is because your dog has lost muscle strength and the leg is weaker and may get sore from building muscles as you progress through the program. Your dog should be placing some weight on the surgical leg (even just toe touching) within 7 days post-operatively. However, every single case is different. Some dogs are using the leg way too quickly, while others take a little longer to bear weight. Over the course of the next few weeks the degree of limping should decrease. However, all dogs tend to be sore on and off for upwards of 6 months post-operatively. If your pet is too active during recovery, his/her limp may become more severe. In this case, you should ice pack the area 3-4 times daily, allow 24 hours of rest, and give medications as directed. If there is no improvement after 24 hours please call us.

- **No licking!** Allowing your dog to lick the incision will compromise healing. Licking introduces bacteria to the area, and in severe cases can cause infection in the bone itself. This can do permanent damage to the leg. **Infection due to licking is the most common complication following TPLO surgery and is completely preventable.**

## Monitor your pet’s incision site

NORMAL	ABNORMAL
Swelling around the incision and surgical leg for the 1st week	Swelling that lasts longer than 1 week
Mild to moderate bruising on the leg. Warm to the touch.	Discomfort that causes your pet to cry out or bite
A small amount of clear or blood tinged discharge from the incision for the first couple days.	-Discharge that is not clear or blood-tinged. -Discharge lasting longer than a few days. -Large amounts of discharge or bleeding
Mild discomfort around the incision and leg itself	Discomfort that continues after pain meds and icing.

**\*\*\*NOTE\*\*\*** If any abnormal signs appear, contact us. The Incision should be healed in 10-14 days following surgery. The staples will need to be removed at this time. Please make an appointment with the doctor in 2 weeks so that we can assess the incision site, and your dog’s recovery.

# Week by Week Recovery Program

The weekly recovery program described in the following pages is invaluable for ensuring your pet's recovery. This program has been designed to:

- Accelerate your pet's recovery to full function of the leg
- Reduce pain and muscle atrophy (muscle loss and weakness)
- Strengthen muscles to help stabilize and support the joint
- Enhance the healing of the affected bone/tissue due to increased blood flow
- Restore normal joint range of motion
- Decrease the risk for future injury
- Recognize when veterinarian intervention is required

The physical therapy exercises should be started slowly and cautiously. It is best to time these approximately 30 minutes after you administer your dog's pain medications so that your pet is most comfortable. Watch for signs of discomfort such as struggling or significant resistance to the exercises. **Signs of pain can include**; decreased appetite, excessive panting, vocalization, aggression, decreased interaction with family members, altered posture, restlessness, flinching when touched, elevated heart rate or respiratory rate, and/or dilated pupils. If your dog is stiff and reluctant to allow further manipulation you may need to reduce the amount of physical activity and/or request additional pain medications. Your dog may be hesitant at first, but his/her comfort level will increase as you progress.

**Please remember:** Adequate rest and physical therapy are the keys to obtaining and maintaining normal limb function. If your dog does not appear to be making progress, has any complications, or you have any questions, please contact us at any time.

**\*\*\*NOTE\*\*\*** It is extremely important that you follow this program guideline as closely as possible to ensure proper recovery. The exercises in this booklet should be performed in the order they are listed.

# Laser Therapy

**Laser Therapy:** Laser therapy, or “photobiomodulation”, is the use of specific wavelengths of light to create therapeutic effects. These effects include improved healing time, pain reduction, increased circulation, and decreased swelling.

Laser therapy often provides improvement after the first session, however, most patients require several treatments (5-8) for greatest benefit. A majority of patients exhibit greater comfort and mobility within 12-24 hours after a laser treatment.



Certified  
Provider



**Laser therapy can help with:**

- Osteoarthritis
- Joint pain
- Edema
- Ligament sprains
- Muscle strains
- Post-surgical pain
- Rehabilitation
- Post-orthopedic

**\*\*\*For the Post-operative TPLO treatment we recommend a multi-visit treatment plan of 8 sessions. These sessions usually begin after the bandage has been removed, and take place 1-2 times weekly. (Twice weekly will likely be more beneficial in the early stages of post-operative recovery).**

# Rehabilitation Plan: Day 0-14 after surgery

## Bandage Care and Removal:

- For the first 48-72 hours following your dog's surgery they will likely have a heavily padded bandage on their leg. Please keep it clean and dry. If it gets wet, it will need to be removed immediately. Place a bag over the bandage when you go outside. This bandage has been applied to protect the incision as the skin is sealing and provide some compression to minimize swelling. Manual therapy can begin as soon as the bandage is removed; 2-3 days following surgery. If the bandage falls off before then (which it can), that is okay. You can remove the bandage at home, or we can remove it for you (no charge). Please call to set up a bandage removal if you would like us to do it.



# Rehabilitation Plan: Day 0-14 after surgery

The following routine should be done daily until your pet is consistently using their leg and has full range of motion in the knee (when you can bend and straighten the surgical leg the same amount as the non-surgical leg). At that point, it is still recommended 1-2 times weekly as your pet will be building muscle and compensating for the surgical leg (the other limbs and lower back will often have muscle tension and discomfort).

## 1) **Massage and Passage Range of Motion (PROM)**

Massaging your dog's leg is important for relaxing the muscles prior to performing the exercises for rehabilitation. Lay your pet on his/her side on a comfortable surface with the surgical leg up. Target the muscles above and below the joint. Start the massage by pressing down on the muscles with the palm of your hand. You should not move your hand over the skin, but instead press down hard enough to move the skin over the tissues below. Using the palm of your hand, it is unlikely that you will press too hard and possibly injure the healing tissue. If your dog shows no signs of discomfort, go back and massage the area with the balls of your fingers (where your fingerprints are), not the fingertips. This provides a deeper massage. Then run the flats of your hand over the whole massaged area. Finally, flex and extend the affected limb several times (gently) until a little resistance is felt. Support the joint while doing this to prevent any twisting of the limb. If you have time, your dog will also greatly benefit from this therapy on the other limbs as they have been compensating for the injured leg. It is also a great way to practice your technique on a "healthy" limb to build your confidence.

### \*\* Frequency and Duration:

2-3 times daily for approximately 15 minutes in repetitions of 10-15





# Rehabilitation Plan: Day 0-14 after surgery

## 3) Controlled Leash walks

**Absolutely NO off-leash activity!!** This requires your dog to be on a short lead very close to your body so that you have complete control. Leash walks must be done slowly and for short periods of time to build up strength in the leg. For the first few days any walks outside should be for potty breaks only. By the end of the first week, your dog should be able to walk for 5-10 minutes per walk. The slower you walk your dog, the more inclined they will be to place weight on the leg. Your dog will benefit more from several short walks in one day rather than a single long walk. Controlled leash walks benefit your dog by:

- Keeping the muscles strong and lubricating the joints
- Encouraging the use of the affected limb
- Decreasing pain
- Positively rewarding your dog emotionally

**\*\*Frequency and Duration:** 3-5 times daily up to 5-10 minutes per walk

## 4) Ice Therapy

After completing the exercises it is especially important to apply cold therapy to the affected knee to reduce pain and inflammation. You can use gel ice packs from the store, frozen bags of popcorn kernels/peas, or bags of crushed iced. Wrap the ice pack in a thin towel before applying. Place the ice on both the inside and outside of the knee.

**\*\*Frequency and Duration:** After exercise 2-3 times daily for 10-15 minutes

## 5) Heat Therapy

By the second week you can begin applying heat to the affected leg before exercise and massage. Heat will draw blood to the area to enhance circulation to the surgical site, which aids in the healing process. Rice bags/socks work very well for this. Do not use any topical products or creams. Check the temperature before applying heat and make sure to use a light towel in between the heat bag and skin. DO NOT apply heat to the joint if it is inflamed (swollen) and warm to the touch.

**\*\* Frequency and Duration:** Prior to massage and exercise for 5-10 minutes

## Activities to Build Strength and Body Awareness: Weeks 3-12

The following exercises will be incorporated into the next 12 weeks of recovery. The intent of this program is to gradually increase strength, balance, and body awareness so that your pet can return to normal activity. These next couple pages provide detailed descriptions of the exercises. Please follow the schedule indicated on the table on the last page of the booklet.

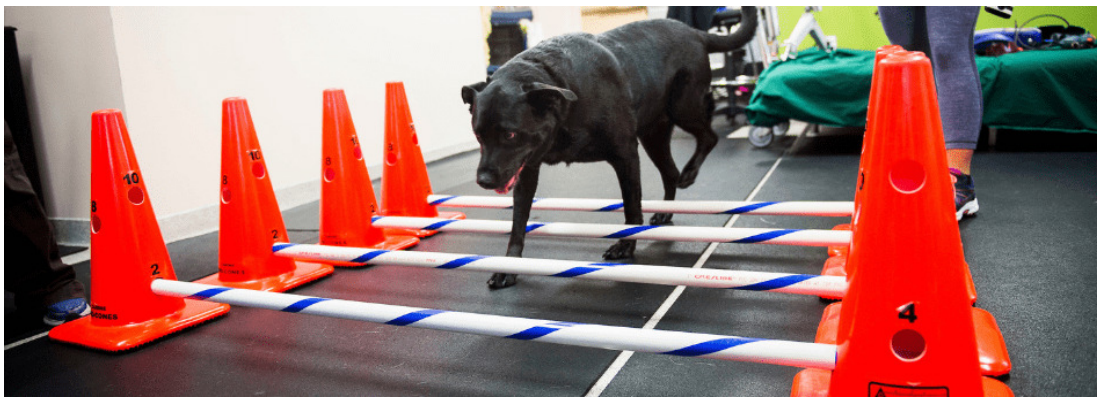
1. **Controlled Leash Walks:** Walks should be on a 6ft lead with your dog by your side. Up until this point, you have been walking up to 10 minutes per walk 3-4 times daily. From this point on you can add 3-5 minutes per walk per week. The activity should only be increased if your dog is consistently using their leg at a walk. You can also incorporate activities such as: Figure 8 patterns, walking up and down curbs in a S-pattern, gentle inclines (hills), stepping over obstacles/through long grass/snow/sand, and short trotting intervals (10 steps). Incorporating these into walks to make them more challenging, will help to increase muscle mass and strength.



2. **Weight Shifting Exercise:** Have your pet stand squarely on a non-slip surface and gently nudge the hind end from side to side for 10 repetitions. This will help with balance and core strength and will lay the groundwork for future core conditioning. For a further challenge, have your pet stand with both front legs on an elevated surface (like stairs), then move to an unstable surface (like a cushion or air mattress). This will force more weight onto the hind end.

## Activities to Build Strength and Body Awareness: Weeks 3-12

- 3. Exercises to Increase Body Awareness:** These exercises have you walking your dog on a leash in a figure 8 pattern and/or through a series of obstacles in a “weaving” pattern. This exercise helps to encourage the use of the leg and increase proprioception (the knowledge of where all one’s body parts are in space). Another great exercise to help with proprioception is walking slowly through the rungs of a ladder laid on the ground. As your pet slowly walks through this obstacle, they must carefully think about where they are putting their feet. Drop treats in between the rungs to make this an extra fun game.



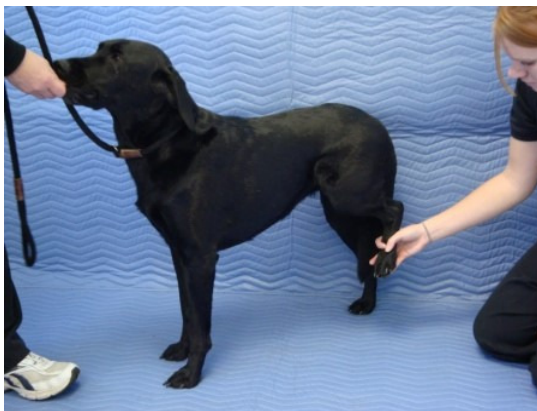
- 4. Cookie Stretches:** Have your pet stand squarely on a non-slip surface and guide their nose to each hip, up, and then down for 1 repetition. Do this 5 times working up to 10 repetitions. Once they are comfortable with this exercise, you can place them on an unstable surface such as a cushion. This exercise will help with spinal mobility and core strengthening

## Activities to Build Strength and Body Awareness: Weeks 3-12

5. **Sit to Stand:** This exercise is a “doggy squat”. Have your pet sit squarely, then stand for 5-10 repetitions. They have a tendency to cheat and use their non-surgical leg to push up so it is often helpful to have their surgical leg against a wall as you perform this exercise. This can also be incorporated into daily walks or at feeding time.



6. **Three-legged Standing:** Have your pet stand squarely on a non-slip surface and then gently lift one leg off of the ground and hold for 5-10 seconds. Alternate with all but the surgical limb. Once your pet becomes good at this exercise, you can try two-legged standing by lifting diagonal legs (left front and right hind, then vice versa). Use a wall for balance if your pet needs extra support.



## Activities to Build Strength and Body Awareness: Weeks 3-12



7. **Wading in the Water:** Once your pet has had their staples removed, they are able to walk in water that is hip height. The buoyancy of the water will displace some of your pet's weight and take some pressure off of the joints. There is also resistance in the water so they are working on strength and flexibility.

**IMPORTANT:** If your pet will not walk in a controlled manner and likes to leap in the water then this is NOT a good activity until after the 8 week x-rays are taken and assessed by the doctor.



8. **Walking in Deep Snow/Sand or in Long Grass:** This will make your pet pick their legs up higher which will build strength. This should only be done if you have your dog on a short leash and have control of them.

## Activities to Build Strength and Body Awareness: Weeks 3-12

9. **Swimming:** Swimming is allowed after the 8 week radiographs have been assessed by the Doctor. The uncontrolled kicking action can be harmful in the early stages of your pet's recovery so it is important to be aware of this. Swimming is a great cardiovascular workout and is great for weight loss.



## Additional Recommendations for Long Term Joint Health and Quality of Life

**1) Weight Management:** The number one way that you can extend the lifespan and quality of your pet's life is by maintaining a lean and fit body condition. Studies show that dogs that are maintained at an ideal weight will likely live 15% longer than dogs that are overfed. This translates to 2 years longer in a dog the size of a labrador retriever. If your Veterinarian considers your dog overweight, it is strongly recommended that you feed your dog a weight management diet. Increased body mass significantly increases your dog's risk of developing osteoarthritis.



### Hill's Metabolic Mobility

Hill's developed Prescription Diet Metabolic Weight j/d clinical nutrition specially formulated to support your pet's weight management and joint health. Metabolic Weight + j/d is clinically proven nutrition to help dogs naturally lose weight by activating their metabolism and improving mobility in as little as 21 days.



### How it helps:

- Nutrition proven to help dog lose weight in 2 months
- Supports your dog's ability to run, walk and jump
- Helps keep lost weight off and provides energy for active play

### How it works:

- Activates pet's metabolism for easy and effective weight loss
- Enriched with omega-3 fatty acids, glucosamine & chondroitin sulfate
- Stimulate dog's natural ability to burn fat



**2) Joint Health:** We have stabilized your dog's knee with the TPLO surgery however, with any injury to a joint there is an increased chance of developing osteoarthritis. Osteoarthritis develops over time with inflammation in the joints and leads to the formation of osteophytes (bone spurs) around the joint, which can cause pain. There are ways to supplement your dog to provide the building blocks for preserving cartilage and increasing joint lubrication, shock absorption, and mobility.

**\*\*Dasuquin Advanced\*\***

We recommend the oral joint supplement Dasuquin Advanced. Dasuquin® goes beyond standard Glucosamine supplements. It contains a patented combination of Avocado/Soybean Unsaponifiables, Green Tea Extract, Glucosamine Hydrochloride, and Chondroitin Sulfate. ASU works synergistically with Glucosamine and Chondroitin Sulfate to help support your pet's joints. In fact, research has shown that the combination of Glucosamine, Chondroitin Sulfate, and ASU works better than Glucosamine and Chondroitin Sulfate alone!



**3) Omega 3 Fatty Acids:** Research shows that omega 3 fatty acids, especially EPA, is helpful in reducing the inflammation associated with arthritis. **Welactin® Canine** provides a rich source of omega-3 fatty acids EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid) derived from cold-water fish. The tasty formulation helps support skin, coat, and overall wellness, in addition to joint health.

**4) Lifelong Physical Fitness:** Physical activity is important for your dog's overall health and wellbeing. Dogs with regular physical activity live longer, healthier lives and have less behavior problems.



# SPECIAL CASES

We perform the TPLO surgery on a variety of dogs at different life stages. For most young healthy dogs, this program will be sufficient to get them back to the activity level they were at prior to their injury and surgery. Others may have other physical challenges and pre-existing conditions to deal with as they recover such as:

- Osteoarthritis
- Bilateral knee surgeries/injuries
- Hip dysplasia
- Back pain
- Muscle pain and myofascial trigger points
- Chronic pain and muscle weakness
- Obesity

**\*The Doctor may alter your pet's rehabilitation program to suit the needs of your pet.**



# After 12 Weeks...

By now, your dog's repaired tibia should be healed completely as long as there have been no post-operative complications. Although the bone may have healed, there is still plenty of conditioning required for the muscles and tissues that support the knee joint. As a rule it takes 2-4 times as long to build muscle as it does to lose it. This means that for every 1 week of inactivity leading to muscle atrophy, 2-4 weeks are needed to rebuild that muscle mass. It may take upwards of 6 months before your dog's hind legs have equal muscle strength. This is why it is so important to keep your dog lean and active for life.

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## Physical Therapy Schedule

Stage of Recovery	Exercise/Manual Therapy	Frequency	Time/Repetitions
0-14 days post op	Follow the manual therapy routine	Daily	2-3 times per day for the first week or until the range of motion is normal compared to the
<b>Recheck: At 2 weeks you will need to have a recheck with the Doctor to have staples removed. We will also assess your pet's progress and make adjustments to your rehabilitation program as needed. Additional costs.</b>			
Weeks 3-4 post op (if your dog is consistently using the leg)	Manual Therapy as above	1-2 times per week	~30 minutes
	Ice Therapy	As needed (after exercise or if your pet overdoes it and is sore)	10-15 minutes
	Controlled Leash Walks	3 times per day	10-20 minutes
	Weight Shifting	Once daily	2 minutes
	Figure 8/weaves/ladder	Once Daily	2 minutes
	Cookie Stretches	Once daily	5-10 repetitions
	Sit to Stand	Twice a day	5-10 repetitions
	Three Legged Standing	Twice a day	2-5 repetitions
Weeks 5-8 post op	Manual therapy as above	1-2 times per week	~ 30 minutes
	Ice Therapy	As needed (after exercise or if your pet overdoes it and is sore)	10-15 minutes
	Controlled Leash Walks. Add in short trot intervals and hills into each walk to increase fitness	3 times per day	add 3-5 mins per walk per week to a max of 20 minutes per walk or 60 mins total per day
	Walking in sand/water/snow/long grass	3 times per week	Incorporate into total walk time
	Weight Shifting: Add unstable footing for further challenge	1-2 times per day	4 minutes; add 1 minute per session per week
	Cookie Stretches	1-2 times per day	Add 3-5 reps per session per week. Up to 15 reps per session
	Sit to Stand	Twice a day	Add 3-5 reps per session per week. Up to 15 reps per session
	Two Legged Standing	Twice a day	30 seconds each side
<b>Recheck: At 8 weeks post op you will need an appointment with the Doctor for follow up x-rays to assess bone healing. The Doctor will inform you if your pet is okay to progress to the following activities. Additional costs.</b>			
Weeks 8-12	Activities can be continued as above with the addition of any of the following		
	Off Leash Activity (Still using caution!)	Daily	20 minutes working up to 60 minutes.
	Swimming	Daily	5 minutes working up to 20 minutes over several weeks