COMPANION THERAPY LASER®
LiteCure, LLC

Reference Guide to Common Conditions

for:

CTL-6
CTL-10

Reference Guide to Common Conditions

for:

CTL-6

CTL-10

This manual of treatment guidelines for Class IV laser therapy is for small animal veterinarians using a Companion CTL-6 and CTL-10 Therapy Lasers.

It is based on the clinical experience of the authors and hundreds of colleagues who have shared their clinical experience.

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The information contained in this manual is for educational purposes only. It is intended as an addition to formal training in laser therapy. Use should accompany a thorough knowledge of laser therapy.

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It is the responsibility of the clinician to gain knowledge of, and comply with, any and all federal, national, state, provincial, and local laws regarding the use of therapeutic lasers for any condition.

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INTRODUCTION

CONDITIONS

COMPANION THERAPY LASER®
LiteCure, LLC

Reference Guide to Common Conditions

successful class IV therapy laser treatments

Treatment Success

Class IV laser therapy is an evolving science in veterinary medicine. As the technology has grown in use, the experience of hundreds of practitioners has contributed to a better understanding of how to achieve reproducible success with treatments. This manual reflects their experience.

Practitioners should follow recommended protocols and should design treatments to optimize results in each patient. Treatment of each patient should follow accurate diagnosis, assessment of the degree of tissue abnormality, and assessment of the degree of chronicity of the abnormality. With the data collected, this manual will help the practitioner design and conduct effective treatments using appropriate doses of laser energy.

Target Dose

Success in treating conditions depends on delivering the appropriate dose of laser energy into the affected tissue (the correct target dose). Insufficient dosing results in treatment failure. Overdosing wastes time and practice resources.

Target doses are expressed in Joules/cm^2. One Joule is the energy delivered with one watt of power in one second. Established target does are:

Superficial Conditions
[conditions in tissue we can see]
3-4 Joules/cm^2

Deep Conditions
[conditions under the skin]
8-10 Joules/cm^2

Treatment Design

Established target doses are safe starting points for successful treatment design. Variations in target depth, tissue mass, tissue density, and disease process require dose adjustment for best effect. Some conditions require doses between the superficial and deep doses. A small number of conditions require higher than established doses.

Treatments should be designed to achieve a dose appropriate for the condition, and to include an appropriate number of treatments, at appropriate intervals, to achieve results. Some conditions require only a single treatment, others require multiple treatments, others require long-term maintenance treatment after achieving clinical improvement.

Treatment Management of Common Conditions

Post-Procedure Conditions

Most post-procedure patients require a single treatment immediately after the procedure. Examples are patients undergoing elective surgeries, minor dental procedures, and closure of minor wounds. Post procedure patients in which there has been more extensive tissue disruption should receive additional treatments (2 to 6) every other day. Examples are orthopedic, laparotomy, or thoracotomy patients.

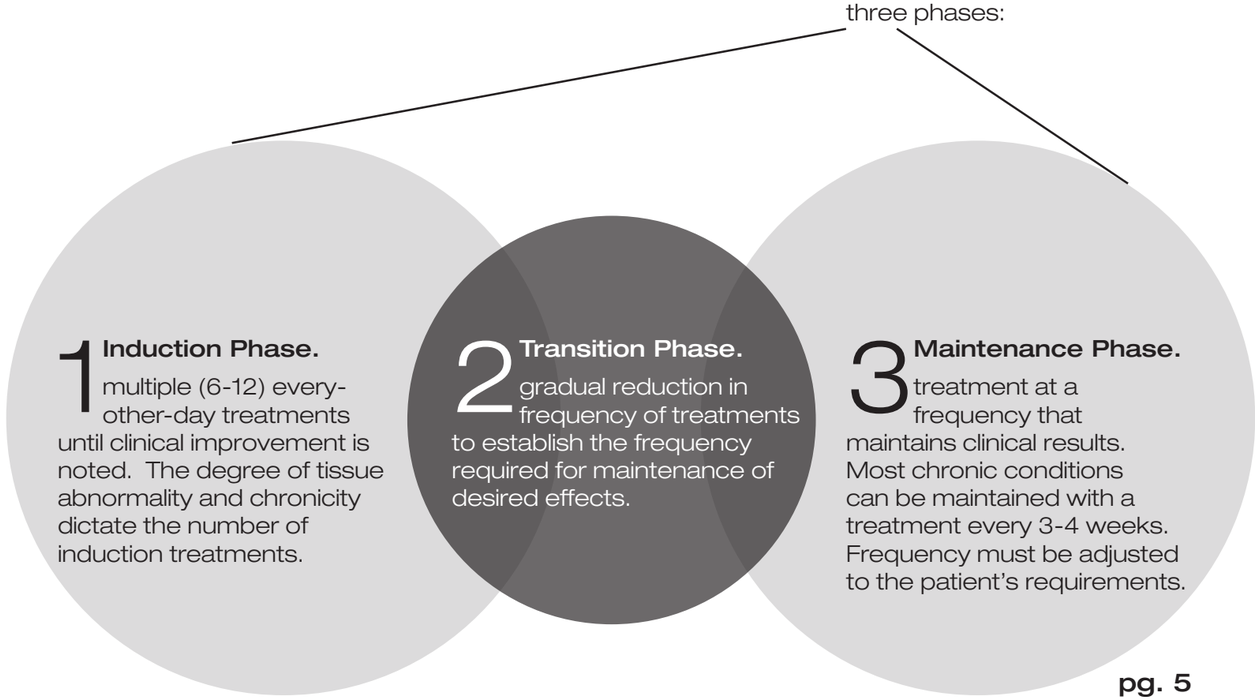
Acute Conditions

Acute conditions are treated once, or multiple times, until resolution of the condition. Examples of single treatment acute conditions are pyotraumatic dermatitis, mild presentation of acute otitis, and abscesses without surrounding cellulitis. Examples of conditions requiring additional (2 to 4) every-other-day treatments are more involved presentations of acute otitis and abscesses with surrounding cellulitis.

Chronic Conditions

Chronic conditions require multiple treatments to achieve clinical improvement, followed by maintenance treatments to maintain the effect. Examples are osteoarthritis, lick granulomas, and chronic lower urinary tract diseases. Successful treatment design for chronic conditions follows accurate diagnosis and assessment of chronicity. Practitioners must avoid having a “one-size-fits-all” treatment design for chronic condition patients.

Patients with chronic conditions are treated in three phases:



Abdominal Disorders

Target Dose

8 - 10 Joules/cm^2

Treatment Philosophy

Laser therapy is an excellent adjunct to medical protocols for abdominal conditions resulting in pain and inflammation.

Note:
Treatment is administered using the Companion Therapy Laser.

Operation Mode:
Continuous Delivery (CW)

Treatment Design

Treatments are administered once a day for the duration of clinical signs. Patients displaying significant abdominal pain can be treated twice a day for enhanced pain relief.

Since most abdominal conditions being treated have generalized pain and inflammation, treatment should include the entire abdomen, treating from both lateral aspects, as well as from the ventral aspect. Use a contact handpiece if the patient will tolerate the pressure of the handpiece.

The authors recommend treating abdominal disorders in Operation mode, using continuous delivery (CW) only. Target dose is achieved by adjusting power and time based on the surface area of the abdomen to be treated.

Estimate the treatment area size using a 3" x 5" card (100 cm^2) as a measuring guide. Estimate the number of 3" x 5" cards required to cover the abdominal area, round to the nearest (100 cm^2), and use the appropriate setting below.

CTL-6

Treatment Area [cm^2]	Power [Watts]	Time [min.]
100	6.0	2.5
200	6.0	4.5
300	6.0	7.5
400	6.0	10.0
500	6.0	14.0
600	6.0	16.5
700	6.0	19.0
800	6.0	22.0

Operation Mode:
Continuous Wave Frequency

CTL-10

Treatment Area [cm^2]	Power [Watts]	Time [min.]
100	10.0	1.5
200	10.0	3.0
300	10.0	4.5
400	10.0	6.0
500	10.0	8.5
600	10.0	10.0
700	10.0	11.5
800	10.0	13.0

Operation Mode:
Continuous Wave Frequency

Abscesses & Tissue Infections

Target Dose

6 - 8 Joules/cm^2

Treatment Philosophy

Laser therapy can reduce the pain and inflammation associated with tissue infection and abscesses.

Note:
Treatment is administered using the Companion Therapy System Laser.

Operation Mode:
Continuous Wave Frequency

Treatment Design

Many tissue infections and abscesses can be treated a single time during the initial patient visit. Abscesses requiring incision and drainage are treated immediately after surgery.

Larger abscesses, and those accompanied by surrounding cellulitis and more involved tissue infections, are treated 3 to 4 times on an every-other-day schedule.

Treat the area of tissue involvement and a margin of normal tissue around the area, and treat from as many different directions as possible.

The authors recommend treating abscesses and tissue infections in Operation Mode, using Continuous Wave frequency only. Target dose is achieved by adjusting power and time based on the size of the area being treated. Estimate the size of the area being treated and use the appropriate setting below.

CTL-6

Treatment Area [in.]	Power [Watts]	Time [min.]
1 x 2	1.0	1.5
2 x 2	2.0	1.5
2 x 3	3.0	1.5
2 x 4	4.0	1.5
3 x 4	5.0	2.0
3 x 5	5.0	2.5

Operation Mode:
Continuous Wave Frequency

CTL-10

Treatment Area [in.]	Power [Watts]	Time [min.]
1 x 2	1.0	1.5
2 x 2	2.0	1.5
2 x 3	3.0	1.5
2 x 4	4.0	1.5
3 x 4	5.0	2.0
3 x 5	7.0	2.0

Operation Mode:
Continuous Wave Frequency

Anal Sacculitis

Target Dose

6 - 8 Joules/cm^2

Treatment Philosophy

Both acute and chronic anal sacculitis patients benefit from Class IV laser therapy. Acute presentations are treated a single time during the outpatient visit. Laser therapy in acute anal sacculitis will remove the need for corticosteroids to reduce pain and inflammation. In chronic anal sacculitis laser therapy is an important adjunct to traditional medical protocols, and will significantly improve patient response.

Note:
Treatment is administered using the Companion Therapy Laser.

Operation Mode:
Continuous Wave Frequency

Treatment Design

Acute anal sacculitis is treated a single time during the initial patient visit. Chronic anal sacculitis is treated through an Induction Phase of every-other-day treatments until symptoms have improved, followed by a Transition Phase of reduced-frequency treatments, leading to a Maintenance Phase of treatments on a frequency required to maintain effect.

The authors recommend treating anal sacculitis in Operation Mode, using Continuous Wave frequency only. Target dose is achieved by adjusting power and time based on the size of the area being treated. Estimate the size of the area being treated, and use the appropriate setting below.

CTL-6

Treatment Area [in.]	Power [Watts]	Time [min.]
1 x 2	1.0	1.0
2 x 2	2.5	1.0
2 x 3	4.5	1.0
2 x 4	6.0	1.0
3 x 4	5.0	2.0
3 x 5	5.0	2.5

Operation Mode:
Continuous Wave Frequency

CTL-10

Treatment Area [in.]	Power [Watts]	Time [min.]
1 x 2	1.0	1.0
2 x 2	2.5	1.0
2 x 3	4.5	1.0
2 x 4	6.0	1.0
3 x 4	5.0	2.0
3 x 5	7.0	2.0

Operation Mode:
Continuous Wave Frequency

Aortic Saddle Thrombus

Treatment Design

Treatment is designed to reduce pain, facilitate improved collateral circulation, and reduce muscle spasms. Treat patients 2 to 3 times a day until pain reduction, muscle relaxation and improved circulation in the rear legs are noted. Treatments should include the dorsal aspect of the posterior abdomen as well as all of both rear legs.

Treat aortic saddle thrombus in Operation Mode, using Continuous Wave frequency only. Target dose is achieved by allocating the appropriate amount of time to each area.

CTL-6

Treatment Area	Power [Watts]	Time [min.]
posterior abdomen	6.0	2.5
hip to stifle right side	6.0	3.5
hip to stifle left side	6.0	3.5
stifle to toes right side	6.0	1.5
stifle to toes left side	6.0	1.5
Total Treatment Time		12.5

Set time to 12.5 minutes, then divide time between areas.

Operation Mode: Continuous Wave Frequency

CTL-10

Treatment Area	Power [Watts]	Time [min.]
posterior abdomen	10.0	1.5
hip to stifle right side	10.0	2.0
hip to stifle left side	10.0	2.0
stifle to toes right side	10.0	1.0
stifle to toes left side	10.0	1.0
Total Treatment Time		7.5

Set time to 7.5 minutes, then divide time between areas.

Operation Mode: Continuous Wave Frequency

Target Dose

Posterior Abdomen
9 Joules/cm^2

Rear Legs Bilateral
6 Joules/cm^2

Treatment Philosophy

Use of the therapy laser can be a valuable adjunct in managing saddle thrombus. In addition to the potentially irreversible consequences of saddle thrombus, these patients are often in extreme pain. Use of the therapy laser will help reduce the pain and promote muscle relaxation, and may contribute to improved perfusion of the rear legs by inducing vasodialation of the collateral vasculature. The effect of laser therapy treament on thrombus recanalization and resolution is unknown.

Since almost all cats with a saddle thrombus have underlying cardiac disease that makes them more prone to clots, the authors emphasize that diagnostics and treatment should address all possible etiological and contributing conditions.

Note:
Treatment is administered using the Companion Therapy Laser.

Operation Mode:
Continuous Wave Frequency

Aural Hematoma

Target Dose

3 - 6
Joules/cm^2

Treatment Philosophy

Protocols incorporating laser therapy have been successful in reducing the time required for resolution of aural hematomas. The positive effects of laser therapy reduce the pain and inflammation of the condition and accelerate healing, allowing for successful intervention without surgery.

Note:
Treatment is administered using the Companion Therapy Laser.

Operation Mode:
Continuous Wave Frequency

Treatment Design

When using laser therapy as part of hematoma treatment the hematoma is drained with a needle or a biopsy punch opening, therapy laser treated, then bandaged with a light pressure bandage. Treatment is repeated every 3 days until fluid is no longer forming and the hematoma has resolved. Reports indicate therapy laser treatment results in healing without fibrosis and development of “cauliflower” ear.

The authors recommend treating aural hematomas in Operation mode, using Continuous Wave frequency only. Target dose is achieved by adjusting power and time based on the size of the area being treated. Estimate the size of the area being treated, and use the appropriate setting below.

CTL-6 or CTL-10

Treatment Area [in.]	Power [Watts]	Time [min.]
1 x 1	1.0	0.5
1 x 2	1.0	1.0
2 x 2	2.0	1.0
2 x 3	2.5	1.0
2 x 4	3.0	1.5
3 x 4	5.0	1.5
3 x 5	5.0	2.0

Operation Mode:
Continuous Wave Frequency

Elbow Hygroma

Target Dose

30
Joules/ cm^2

*Note: The target dose for elbow hygroma treatment is much higher than for other conditions. Lower target doses result in prolonged time to resolution.

Treatment Philosophy

Because of their complex etiology and deep, chronic tissue changes, elbow hygromas are a challenge to treat. Unless environmental changes are made, continue trauma to the elbow will result in failure of medical or surgical treatment. As an adjunct to environmental manipulation, bandaging and pharmacological management, proper therapy laser treatment can shorten time to resolution and maintenance.

Note:
Treatment is administered using the Companion Therapy Laser.

Operation Mode:
Continuous Wave Frequency

Treatment Design

Following assessment of contributing environmental factors, and their correction, administer therapy laser treatments along with other treatment modalities.

Laser therapy should continue until a hygroma has resolved, and then should accompany long-term maintenance. An Induction Phase of every other day treatments should persist until a response is noted, followed by a Transition Phase of reduced frequency treatments, leading to a Maintenance Phase of treatments on a frequency required to maintain effect. Treat lesions from all possible directions using either a contact or non-contact handpiece.

Treat elbow hygromas in Operation Mode, using Continuous Wave frequency. Target dose is achieved by adjusting power and time based on the area being treated. Estimate the size of the area being treated, and use the appropriate setting below.

CTL-6

Treatment Area [in.]	Power [Watts]	Time [min.]
1 x 1	3.0	1.0
1.5 x 1.5	5.0	1.5
2 x 2	5.0	2.5
2.5 x 2.5	5.0	4.0
3 x 3	6.0	5.0

Operation Mode:
Continuous Wave Frequency

CTL-10

Treatment Area [in.]	Power [Watts]	Time [min.]
1 x 1	3.0	1.0
1.5 x 1.5	5.0	1.5
2 x 2	6.5	2.0
2.5 x 2.5	7.0	3.0
3 x 3	8.0	3.5

Operation Mode:
Continuous Wave Frequency

Fractures

Target Dose

6 - 10 Joules/cm^2

Treatment Philosophy

Fractures heal more rapidly when treated with laser therapy. Studies show that fracture site edema is reduced and angiogenesis is stimulated, creating an environment in which the fracture heals more quickly.

Note:
Treatment is administered using the Companion Therapy Laser.

Operation Mode:
Continuous Wave Frequency

Treatment Design

Begin treatment of fractures immediately after stabilization, then treat every-other-day for a total of 6 treatments. Treat from 360 degrees or as many directions as possible. Bandage, splint, or cast material must be removed for treatment, or create a window in the material that can be uncovered for treatment.

The range of target doses recommended for fractures reflects the range of soft tissue mass surrounding each fracture. The treatment parameters given below are calculated with a lower target dose for smaller treatment areas and a larger target dose for larger treatment areas.

The authors recommend treating fractures in Operation mode, using continuous Wave frequency only. Target dose is achieved by adjusting power and time based on the size of the area being treated. Estimate the size of the area being treated, and use the appropriate setting below.

CTL-6

Treatment Area [in.]	Power [Watts]	Time [min.]
1 x 2	1.0	1.5
2 x 2	2.0	1.5
2 x 3	3.0	1.5
2 x 4	5.0	1.5
3 x 5	6.0	2.5
4 x 6	6.0	4.0
6 x 8	6.0	7.0

Operation Mode: Continuous Wave Frequency

CTL-10

Treatment Area [in.]	Power [Watts]	Time [min.]
1 x 2	1.0	1.5
2 x 2	2.0	1.5
2 x 3	3.0	1.5
2 x 4	5.0	1.5
3 x 5	6.0	2.5
4 x 6	8.0	3.0
6 x 8	10.0	4.5

Operation Mode: Continuous Wave Frequency

Gingivitis & Periodontal Disease

Target Dose

6 - 8 [mouth closed]
3 - 4 [mouth open]
Joules/cm^2

Treatment Philosophy

Laser Therapy is a helpful adjunct to medical and dental protocols for gingivitis and periodontal disease.

Note:
Treatment is administered using the Companion Therapy Laser.

Protocol Used:
Contaminated Wound Protocol

Treatment Design

Simple gingivitis may be treated a single time along with initiation of appropriate dental care. Periodontal disease is treated through an Induction Phase of every-other-day treatments until symptoms have improved, followed by a Transition Phase of reduced-frequency treatments, leading to a Maintenance Phase of treatments on a frequency required to maintain effect.

Open-mouth treatment is preferred if the patient will tolerate it. If not, treat with the mouth closed, through the cheeks, and up through the inter-mandibular space. When treating with the mouth closed there is a greater mass of tissue to treat, thus the target dose must be higher.

The authors recommend treating gingivitis and periodontal disease with the Contaminated Wound protocol, adjusting the power based on estimated measurements of the surface area to be treated. Estimate the size of the area being treated and use the appropriate setting below depending on whether the mouth is closed or open.

	Mouth Closed		Mouth Open	
Treatment Area [in.]	Power [Watts]	Number of Cycles Through Protocol	Power [Watts]	Number of Cycles Through Protocol
1 x 2	1.5	1	0.5	1
1 x 3	2.0	1	1.0	1
2 x 2	3.0	1	1.5	1
2 x 3	4.5	1	2.5	1
2 x 4	3.0	2	3.5	1
3 x 4	5.0	2	5.0	1
3 x 5	4.5	3	5.0	2

Protocol Used: Contaminated Wound Protocol

Lick Granuloma

Target Dose

30
Joules/ cm^2

*Note: The target dose for lick granuloma treatment is much higher than for other conditions. Lower target doses result in prolonged time to resolution.

Treatment Philosophy

Because of their complex etiology and deep, chronic tissue changes, lick granulomas are a challenge to treat. As an adjunct to multi-modal behavioral and pharmacological management, proper therapy laser treatment can shorten time to resolution and maintenance.

Note:
Treatment is administered using the Companion Therapy Laser.

Operation Mode:
Continuous Wave Frequency

Treatment Design

Following accurate diagnosis of etiology, administer therapy laser treatments along with other treatment modalities.

Laser therapy should continue until the granuloma is controlled, and then should accompany long-term maintenance. An Induction Phase of every-other-day treatments should persist until clinical improvement, followed by a Transition Phase of reduced-frequency treatments, leading to a Maintenance Phase of treatments on a frequency required to maintain effect.

Treat lesions from all possible directions using either a contact or non-contact handpiece.

The authors recommend treating lick granulomas in Operation mode, using Continuous Wave frequency. Target dose is achieved by adjusting power and time based on the area being treated. Estimate the size of the area being treated, and use the appropriate setting below. The time of the protocol varies depending on area.

CTL-6

Treatment Area [in.]	Power [Watts]	Time [min.]
1.0 x 1.0	3.0	1.0
1.5 x 1.5	5.0	1.5
2.0 x 2.0	5.0	2.5
2.5 x 2.5	5.0	4.0
3.0 x 3.0	6.0	5.0

Operation Mode:
Continuous Wave Frequency

CTL-10

Treatment Area [in.]	Power [Watts]	Time [min.]
1.0 x 1.0	3.0	1.0
1.5 x 1.5	5.0	1.5
2.0 x 2.0	6.5	2.0
2.5 x 2.5	7.0	3.0
3.0 x 3.0	8.0	3.5

Operation Mode:
Continuous Wave Frequency

Musculoskeletal Injury, Acute

Target Dose

8 - 10
Joules/cm^2

Treatment Philosophy

Laser therapy reduces the pain and inflammation of musculoskeletal injuries and shortens their healing time when used along with traditional medical and rehabilitation protocols.

Note:
Treatment is administered using the Companion Therapy Laser.

Operation Mode:
Continuous Wave Frequency

Treatment Design

Many acute musculoskeletal injuries can be treated a single time following initial diagnosis. Some injuries require 4 to 6 every-other-day treatments, others require more until the injury has healed.

Treatments should include the injury site as well as tissues biomechanically involved with the site. Treat from as many directions as possible. Use a contact handpiece with light pressure if the patient will tolerate it. Slow range-of-motion movement during treatment is recommended.

The authors recommend treating musculoskeletal injuries in Operation Mode, using continuous wave frequency only at maximum power. Estimate the treatment area size using a 3” x 5” card (100 cm^2) as a measuring guide. Estimate the number of 3” x 5” cards required to cover the area, round to the nearest 50 - 100 cm^2, and use the appropriate setting below.

CTL-6

Treatment Area [cm^2]	Power [Watts]	Time [min.]
50	4.0	2.0
100	5.0	2.5
200	6.0	5.5
300	6.0	7.5
400	6.0	10.0
500	6.0	14.0
600	6.0	16.5
700	6.0	19.0
800	6.0	22.0

Operation Mode:
Continuous Wave Frequency

CTL-10

Treatment Area [cm^2]	Power [Watts]	Time [min.]
50	4.0	2.0
100	5.0	2.5
200	10.0	2.5
300	10.0	4.5
400	10.0	6.0
500	10.0	8.5
600	10.0	10.0
700	10.0	11.5
800	10.0	13.0

Operation Mode:
Continuous Wave Frequency

Osteoarthritis

Target Dose

6 - 10
Joules/cm^2

Treatment Philosophy

Laser therapy reduces the pain and inflammation of arthritis, and is an important part of multi-modal management of canine and feline arthritis patients.

When arthritic patients are treated with appropriate target dose and treatment design, practitioners report 90 - 95% respond with reduced symptoms, increased mobility, and improved quality of life. Frequently, with long-term treatment, reliance on medication can be reduced. Many felines, for whom medication options are very limited, can be maintained on laser therapy alone.

Note:
Treatment is administered using the Companion Therapy Laser.

Explanation of Target Dose

Osteoarthritis is a deep tissue condition requiring high target does. Range in patient size and variation in soft tissue mass around joints dictate a range of target doses. The recommended settings for treating arthritis in the charts on the following pages are based on measurement of joints and associated soft tissues in different size patients and target doses appropriate for the mass of soft tissue associated with those joints.

Treatment Design

Owners must understand that treatment of arthritis is not curative, and helping their arthritic pet requires a comprehensive management plan. The design of laser therapy treatments is a part of the overall management plan.

Accurate diagnosis is imperative. For laser therapy to succeed, the correct areas have to be treated. A complete orthopedic exam, including evaluation of range of motion and appropriate radiographs, can help establish which joint areas require treatment.

Treat the affected joints as well as all tissues biomechanically involved with the joint. Chronic arthritis results in pain and inflammation in the muscles, tendons, and other soft tissues associated with the joint. All of these tissues must be treated along with the joint for success.

Patients undergoing initial evaluation not on medication for arthritis should begin laser therapy without starting medication. After response to laser therapy has been noted, and a maintenance schedule established, if additional relief is needed, then medications are added to the management plan.

Osteoarthritis Continued

Treatment Design Continued

Patients already on medication should begin laser therapy without any change in medication during initial laser therapy. Once response to laser therapy has been noted, medications can be adjusted (frequency reduced) as a maintenance schedule is established.

Osteoarthritis is treated through an Induction Phase of every-other-day treatments until response is noted, followed by a Transition Phase of reduced frequency treatments, leading to a Maintenance Phase of treatments on a frequency required to maintain effect.

Most patients will show improvement within 2 to 3 treatments during the Induction Phase. This initial response is due to the quick pain-relieving effect of the therapy laser. As treatments continue there is a cumulative long-term reduction of inflammation allowing transition to the maintenance phase.

Other patients require more treatments before improvement is noted. 6 Induction Phase treatments is average; some patients may require as many as 9 to 12. If a patient does not respond within 12 treatments, the diagnosis and areas being treated should be re-evaluated.

Some patients will display increased soreness after the first 1 to 2 treatments. This is a result of vasodilation in the target tissues and subsides quickly without intervention.

Treat affected areas from as many directions as possible. Use a contact handpiece with light pressure if the patient will tolerate it. Slow range-of-motion movement during treatment is recommended and is usually tolerated after initial pain reduction.

The authors recommend treating arthritis in Operation Mode, using Continuous Wave frequency only, at power levels appropriate for the area being treated. Time of treatment is adjusted to deliver the correct target dose.

Target Dose

6 - 10
Joules/cm^2

Operation Mode:
Continuous Wave
Frequency

Osteoarthritis

CTL-6

Operation Mode:
Continuous Wave Frequency

Feline

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	3.0	1.0
elbow	3.0	1.5
shoulder	3.0	1.5
stifle	3.0	2.5
hip	4.0	2.0
neck	5.0	1.5
back - lumbar	6.0	2.5

Operation Mode: Continuous Wave Frequency

Canine <20 lbs.

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	3.0	1.5
elbow	4.0	1.5
shoulder	4.0	1.5
stifle	4.0	2.5
hip	5.0	2.0
neck	6.0	1.5
back - lumbar	6.0	3.0

Operation Mode: Continuous Wave Frequency

Canine 20 - 40 lbs.

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	4.0	1.5
elbow	5.0	2.0
shoulder	6.0	2.0
stifle	6.0	3.0
hip	6.0	3.5
neck	6.0	3.0
back - lumbar	6.0	4.0

Operation Mode: Continuous Wave Frequency

Canine 40 - 60 lbs.

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	5.0	2.0
elbow	5.0	3.5
shoulder	6.0	3.5
stifle	6.0	5.0
hip	6.0	5.5
neck	6.0	5.0
back - lumbar	6.0	6.5

Operation Mode: Continuous Wave Frequency

Canine 60 - 80 lbs.

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	6.0	2.0
elbow	6.0	4.0
shoulder	6.0	5.0
stifle	6.0	7.0
hip	6.0	7.5
neck	6.0	6.5
back - lumbar	6.0	8.0

Operation Mode: Continuous Wave Frequency

Canine 80 - 100 lbs.

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	6.0	3.0
elbow	6.0	5.5
shoulder	6.0	6.0
stifle	6.0	9.0
hip	6.0	9.5
neck	6.0	8.0
back - lumbar	6.0	10.0

Operation Mode: Continuous Wave Frequency

Canine >100 lbs.

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	6.0	4.0
elbow	6.0	6.5
shoulder	6.0	7.5
stifle	6.0	11.5
hip	6.0	12.0
neck	6.0	10.0
back - lumbar	6.0	14.0

Operation Mode: Continuous Wave Frequency

Osteoarthritis

CTL-10

Operation Mode:
Continuous Wave Frequency

Feline

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	3.0	1.0
elbow	3.0	1.5
shoulder	3.0	1.5
stifle	3.0	2.5
hip	4.0	2.0
neck	5.0	1.5
back - lumbar	6.0	2.5

Operation Mode: Continuous Wave Frequency

Canine <20 lbs.

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	3.0	1.5
elbow	4.0	1.5
shoulder	4.0	1.5
stifle	4.0	2.5
hip	5.0	2.0
neck	6.0	1.5
back - lumbar	6.0	3.0

Operation Mode: Continuous Wave Frequency

Canine 20 - 40 lbs.

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	4.0	1.5
elbow	5.0	2.0
shoulder	6.0	2.0
stifle	6.0	3.0
hip	7.0	3.0
neck	7.0	2.5
back - lumbar	8.0	3.0

Operation Mode: Continuous Wave Frequency

Canine 40 - 60 lbs.

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	5.0	2.0
elbow	5.0	3.5
shoulder	7.0	3.0
stifle	7.0	4.5
hip	8.0	4.0
neck	8.0	3.5
back - lumbar	8.0	4.5

Operation Mode: Continuous Wave Frequency

Canine 60 - 80 lbs.

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	6.0	2.0
elbow	8.0	3.0
shoulder	8.0	3.5
stifle	9.0	4.5
hip	10.0	4.5
neck	10.0	4.0
back - lumbar	10.0	4.5

Operation Mode: Continuous Wave Frequency

Canine 80 - 100 lbs.

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	8.0	2.0
elbow	8.0	4.0
shoulder	10.0	4.0
stifle	10.0	5.5
hip	10.0	6.0
neck	10.0	5.0
back - lumbar	10.0	6.0

Operation Mode: Continuous Wave Frequency

Canine >100 lbs.

Treatment Area	Power [Watts]	Time [min.]
carpus / tarsus	8.0	3.0
elbow	8.0	5.0
shoulder	10.0	4.5
stifle	10.0	6.5
hip	10.0	7.0
neck	10.0	6.0
back - lumbar	10.0	8.5

Operation Mode: Continuous Wave Frequency

Otitis, Acute & Chronic

Target Dose

3 - 4 [superficial]
8 - 10 [deep]

Treatment Philosophy

Laser therapy is an excellent adjunct to medical protocols for otitis. Pain, swelling and inflammation are reduced, allowing more effective topical treatment, and vasodilation facilitates better penetration of systemic medications into the diseased tissue.

Otitis has two components, each of which must be treated with the therapy laser for best effect.

1. Superficial component: That part of the anatomy we can see, the visible part of the external ear canal and the affected areas of the pinna.

2. Deep component: That part of the anatomy we can't see, the horizontal ear canal and the middle ear.

Each component is treated separately since each involves a different mass of tissue and requires a different dose of energy for effect.

Treatment Design

Acute Otitis: Mild cases of acute otitis are treated a single time during the initial office visit. Cases of acute otitis with more pronounced changes in the tissue are treated 3 to 4 times, every other day.

Chronic Otitis: Chronic otitis involves very significant changes in the tissues. Laser therapy should accompany medical protocols until the condition is controlled, and then should accompany long-term maintenance. An Induction Phase of every-other-day treatments should persist until symptoms have improved, followed by a Transition Phase of reduced-frequency treatments, leading to a Maintenance Phase of treatments on a frequency required to maintain effect.

The authors recommend treating otitis with the Contaminated Wound protocol, adjusting the power based on estimated measurements of the surface area being treated. Estimate the size of the superficial and deep areas being treated, and use the appropriate setting on the following page.

CTL-6

Superficial Component

Treatment Area [in.]	Power [Watts]	# of cycles through protocol
1 x 2	1.0	1
2 x 2	2.0	1
2 x 3	3.0	1
2 x 4	4.0	1
3 x 4	5.0	1
3 x 5	6.0	1

Protocol Used:
Contaminated Wound Protocol

Deep Component

Treatment Area [in.]	Power [Watts]	# of cycles through protocol
1 x 2	2.0	1
2 x 2	4.0	1
2 x 3	6.0	1
2 x 4	4.0	2
3 x 4	5.0	2

Protocol Used:
Contaminated Wound Protocol

CTL-10

Superficial Component

Treatment Area [in.]	Power [Watts]	# of cycles through protocol
1 x 2	1.0	1
2 x 2	2.0	1
2 x 3	3.0	1
2 x 4	4.0	1
3 x 4	5.0	1
3 x 5	6.0	1

Protocol Used:
Contaminated Wound Protocol

Deep Component

Treatment Area [in.]	Power [Watts]	# of cycles through protocol
1 x 2	2.0	1
2 x 2	4.0	1
2 x 3	6.0	1
2 x 4	8.0	1
3 x 4	10.0	1

Protocol Used:
Contaminated Wound Protocol

Perianal Fistulas

Target Dose

12 Joules/cm^2

Treatment Philosophy

Because of their complex etiology and deep, chronic tissue changes, perianal fistulas are a challenge to treat. As an adjunct to multi-modal medical management, therapy laser treatment can help manage the condition.

Note:
Treatment is administered using the Companion Therapy Laser.

Operation Mode:
Continuous Wave Frequency

Treatment Design

Administer therapy laser treatments along with other treatment modalities. Perianal fistulas response to all treatment modalities is slow. Laser therapy is a valuable adjunct in treatment, but must be continued long-term.

An Induction Phase of every-other-day treatments should persist until clinical improvement is noted, followed by a Transition Phase of reduced frequency treatments, leading to a Maintenance Phase of treatments on a frequency required to maintain effect.

The authors recommend treating perianal fistulas in Operation mode, using Continuous Wave frequency only. Target dose is achieved by adjusting power and time based on the area being treated. Estimate the size of the area being treated and use the appropriate setting below.

CTL-6

Treatment Area [in.]	Power [Watts]	Time [min.]
1.0 x 1.0	1.0	1.0
1.5 x 1.5	2.0	1.0
2.0 x 2.0	3.0	1.0
2.5 x 2.5	5.0	1.5
3.0 x 3.0	6.0	2.0

Operation Mode:
Continuous Wave Frequency

CTL-10

Treatment Area [in.]	Power [Watts]	Time [min.]
1.0 x 1.0	1.0	1.0
1.5 x 1.5	3.0	1.0
2.0 x 2.0	5.0	1.0
2.5 x 2.5	8.0	1.0
3.0 x 3.0	8.0	1.5

Operation Mode:
Continuous Wave Frequency

Pyotraumatic Dermatitis

Target Dose

3 - 4 Joules/cm^2

Treatment Philosophy

Like other superficial inflammatory conditions, pyotraumatic dermatitis responds very well to Class IV laser therapy when used as an adjunct to medical protocols during the initial management of lesions. The reduction in pain and inflammation can be seen within a few hours. Many practitioners find that systemic corticosteroids are not necessary if the therapy laser is used.

Note:
Treatment is administered using the Companion Therapy Laser.

Protocol Used:
Contaminated Wound Protocol

Treatment Design

After initial clipping and cleaning pyotraumatic dermatitis, treat the affected area a single time using a non-contact handpiece. Scan larger areas in a grid pattern to ensure treatment of the entire area. If areas of deeper pyoderma or cellulitis are noted, additional (2 - 4) every-other-day treatments are indicated.

The authors recommend treating pyotraumatic dermatitis with the Contaminated Wound protocol, adjusting the power based on measurements of the affected target area. Estimate the size of the area being treated and use the appropriate setting below.

CTL-6 or CTL-10

Treatment Area [in.]	Power [Watts]	# of cycles through protocol
1 x 2	1.0	1
2 x 2	2.0	1
2 x 3	3.0	1
2 x 4	4.0	1
3 x 4	5.0	1
3 x 5	6.0	1
4 x 5	4.0	2
4 x 6	6.0	2

Protocol Used:
Contaminated Wound Protocol

Rhinitis - Sinusitis

Target Dose

8 - 10 Joules/cm^2

Treatment Philosophy

Laser therapy is a helpful adjunct to medical and surgical protocols for sinusitis and rhinitis.

Note:
Treatment is administered using the Companion Therapy Laser.

Operation Mode:
Continuous Wave Frequency

Treatment Design

Rhinitis and sinusitis are treated through an Induction Phase of every-other-day treatments until symptoms have improved, followed by a Transition Phase of reduced frequency treatments, leading to a Maintenance Phase of treatments on a frequency required to maintain effect.

Treat over the nasal cavity and the maxillary and frontal sinuses. Avoid direct beam exposure of the retina through the pupil. Treat with a contact handpiece to help avoid eye exposure.

The authors recommend treating rhinitis and sinusitis in Operation mode, using Continuous Wave frequency only. Target dose is achieved by adjusting power and time based on the area to be treated.

Estimate size using a 3" x 5" card (100 cm^2) as a measuring guide. Estimate the number of 3" x 5" cards required to cover the area being treated, round to the nearest 50 cm^2, and use the appropriate setting below.

CTL-6

Treatment Area [cm^2]	Power [Watts]	Time [min.]
50	3.0	2.0
100	6.0	2.0
150	6.0	4.0
200	6.0	5.0
250	6.0	7.0
300	6.0	8.0

Operation Mode:
Continuous Wave Frequency

CTL-10

Treatment Area [cm^2]	Power [Watts]	Time [min.]
50	3.0	2.0
100	6.0	2.0
150	8.0	3.0
200	8.0	4.0
250	10.0	4.0
300	10.0	5.0

Operation Mode:
Continuous Wave Frequency

Snake Bites

Target Dose

8 Joules/cm^2

Treatment Philosophy

The pain and inflammation resulting from venomous snake bites can be reduced with laser therapy which also accelerates healing of the damaged tissue.

Note:
Treatment is administered using the Companion Therapy Laser.

Operation Mode:
Continuous Wave Frequency

Treatment Design

Clinical experience has shown it is safe to begin laser therapy treatment on initial presentation of vapid (rattlesnake, copperhead, cottonmouth) snake bites. Treatment of elapid (coral snake) snake bites is contraindicated until 24 hours after a bite to avoid increased systemic absorption of their neurotoxin toxin.

Begin laser therapy treatment once a day. Treat patients with pain uncontrolled by medications twice a day. Treat the bite area and all tissue affected by the toxin. If tissue is lost or surgery is required, convert to a therapy laser Wound management protocol.

The authors recommend treating snake bites in Operation mode, using Continuous Wave frequency only. Target dose is achieved by adjusting power and time based on the area to be treated.

Estimate size using a 3" x 5" card (100 cm^2) as a measuring guide. Estimate the number of 3" x 5" cards required to cover the area being treated, round to the nearest 100 cm^2, and use the appropriate setting below.

CTL-6

Treatment Area [cm^2]	Power [Watts]	Time [min.]
100	6.0	2.0
200	6.0	4.5
300	6.0	7.0
400	6.0	9.0
500	6.0	11.0
600	6.0	13.0
700	6.0	15.5
800	6.0	18.0

Operation Mode:
Continuous Wave Frequency

CTL-10

Treatment Area [cm^2]	Power [Watts]	Time [min.]
100	6.0	2.0
200	7.0	4.0
300	8.0	5.0
400	9.0	5.0
500	10.0	6.5
600	10.0	8.0
700	10.0	9.5
800	10.0	11.0

Operation Mode:
Continuous Wave Frequency

Stomatitis [Feline Oropharyngeal Inflammation]

Target Dose

5-6 [mouth closed]
3-4 [mouth open]
Joules/cm^2

Treatment Philosophy

Laser Therapy is a helpful adjunct to medical and dental protocols for feline oropharyngeal inflammation. Although lesions often do not improve in appearance, patients frequently display significantly reduced clinical signs.

Note:
Treatment is administered using the Companion Therapy Laser.

Protocol Used:
Contaminated Wound Protocol

Treatment Design

Feline oropharyngeal inflammation is treated through an Induction Phase of every-other-day treatments until symptoms have improved, followed by a Transition Phase of reduced-frequency treatments, leading to a Maintenance Phase of treatments on a frequency required to maintain effect.

Open mouth treatment is preferred if the patient will tolerate it. If not, treat with the mouth closed, through the cheeks, and up through the inter-mandibular space. When treating with the mouth closed there is a greater mass of tissue to treat, thus the target dose must be higher.

The authors recommend treating stomatitis with the Contaminated Wound protocol, adjusting the power based on estimated measurements of the surface are being treated. Estimate the size of the area being treated and use the appropriate setting below depending on whether the mouth is open or closed.

CTL-6 or CTL-10

	Mouth Closed		Mouth Open	
Treatment Area [in.]	Power [Watts]	Number of Cycles Through Protocol	Power [Watts]	Number of Cycles Through Protocol
1 x 2	1.0	1	0.5	1
1 x 3	1.5	1	1.0	1
2 x 3	3.0	1	2.5	1
2 x 4	3.5	2	4.0	1
3 x 4	4.0	2	5.0	1
3 x 5	4.5	2	3.5	2

Protocol Used:
Contaminated Wound Protocol

Thoracic Disorders

Target Dose

6 - 8
Joules/cm^2

Treatment Philosophy

Laser therapy is an excellent adjunct to medical protocols for thoracic conditions in which pain and inflammation are part of the disease process.

Note:
Treatment is administered using the Companion Therapy System Laser.

Operation Mode:
Continuous Wave Frequency

Treatment Design

Since most thoracic conditions being treated involve the entire thorax, treat through the intercostal spaces from both lateral aspects. A contact handpiece is recommended. Acute conditions are treated every-other-day until resolution of clinical signs. Chronic conditions should be treated through an Induction Phase of every-other-day treatments until symptoms imrpove, followed by a Transition Phase of reduced frequency treatments, leading to a Maintenance Phase of treatments on a frequency required to maintain effect.

The authors recommend treating thoracic diseases in Operation mode, using Continuous Delivery (CW) only. Target dose is achieved by adjusting power and time based on the area of the thorax to be treated.

Estimate size using a 3" x 5" card (100 cm^2) as a measuring guide. Estimate the number of 3" x 5" cards required to cover the area being treated, round to the nearest 100 cm^2 and use the appropriate setting below.

CTL-6

Treatment Area [cm^2]	Power [Watts]	Time [min.]
200	6.0	3.5
300	6.0	6.0
400	6.0	8.0
500	6.0	11.0
600	6.0	13.0
700	6.0	15.5
800	6.0	18.0

Operation Mode:
Continuous Wave Frequency

CTL-10

Treatment Area [cm^2]	Power [Watts]	Time [min.]
200	6.0	3.5
300	6.0	6.0
400	8.0	6.0
500	8.0	8.5
600	9.0	9.0
700	10.0	9.5
800	10.0	11.0

Operation Mode:
Continuous Wave Frequency

Urinary Tract Disorders

Target Dose

8 - 10 Joules/cm^2

Treatment Philosophy

Laser therapy is an excellent adjunct to medical protocols for acute and chronic disorders of the lower urinary tract.

Note:
Treatment is administered using the Companion Therapy Laser.

Operation Mode:
Continuous Wave Frequency

Treatment Design

Lower urinary tract conditions are treated with a contact handpiece from ventral and both lateral aspects. The pelvic urethra is treated by aiming from cranial and caudal directions into the pelvic cavity.

Acute conditions are treated every other day until resolution of clinical signs. Severely painful patients may be treated twice a day. Chronic conditions are treated through an Induction Phase of every-other-day treatments until symptoms improve, followed by a Transition Phase of reduced frequency treatments, leading to a Maintenance Phase of treatments on a frequency required to maintain effect.

The authors recommend treating urinary tract disorders in Operation mode, using Continuous Wave frequency only at a maximum power. Target dose is achieved by adjusting time based on the surface area of the caudal one third of the abdomen.

Estimate size using a 3" x 5" card (100 cm^2) as a measuring guide. Estimate the number of 3" x 5" cards required to cover the area being treated, round to the nearest 100 cm^2, and use the appropriate setting below.

CTL-6

Treatment Area [cm^2]	Power [Watts]	Time [min.]
100	6.0	2.0
200	6.0	4.5
300	6.0	7.5
400	6.0	10.0
500	6.0	14.0
600	6.0	16.5

Operation Mode:
Continuous Wave Frequency

CTL-10

Treatment Area [cm^2]	Power [Watts]	Time [min.]
100	10.0	1.5
200	10.0	3.0
300	10.0	4.5
400	10.0	6.0
500	10.0	8.5
600	10.0	10.0

Operation Mode:
Continuous Wave Frequency

Wounds, Superficial

Target Dose

3 - 4 Joules/cm^2

Treatment Philosophy

Laser therapy reduces wound pain and inflammation and accelerates wound closure when accompanying traditional wound therapy. Practitioners have documented accelerated rate of epithelial migration with laser therapy treatment of wounds.

Note:
Treatment is administered using the Companion Therapy Laser.

Protocol Used:
Contaminated Wound Protocol

Treatment Design

Treat wounds with a non-contact handpiece (a "non-roller ball" handpiece) to avoid handpiece contamination. Scan wounds in a grid pattern to ensure uniform treatment.

Laser therapy cannot be administered through bandage material. Design treatments to coincide with bandage changes, every-other-day, or every three days.

The authors recommend treating wounds with the Contaminated Wound protocol, adjusting the power based on measurements of the affected target area. Estimate the size of the area being treated and use the appropriate setting below.

CTL-6

Treatment Area [in.]	Power [Watts]	# of cycles through protocol
1 x 2	1.0	1
2 x 2	1.5	1
2 x 3	2.0	1
2 x 4	3.0	1
3 x 4	4.5	1
3 x 5	5.5	1
4 x 5	4.0	2
4 x 6	4.5	2
6 x 8	5.0	3

Protocol Used:
Contaminated Wound Protocol

CTL-10

Treatment Area [in.]	Power [Watts]	# of cycles through protocol
1 x 2	1.0	1
2 x 2	1.5	1
2 x 3	2.0	1
2 x 4	3.0	1
3 x 4	4.5	1
3 x 5	5.5	1
4 x 5	7.5	1
4 x 6	4.5	2
6 x 8	7.5	2

Protocol Used:
Contaminated Wound Protocol

Wounds, Deep

Target Dose

8
Joules/cm^2

Treatment Philosophy

Laser therapy reduces wound pain and inflammation and accelerates wound closure when accompanying traditional wound therapy. Practitioners have documented accelerated rate of epithelial migration with laser therapy treatment of wounds. Wounds affecting deep tissues require a higher target dose than those affecting only superficial tissue.

Note:
Treatment is administered using the Companion Therapy Laser.

Protocol Used:
Contaminated Wound Protocol

Treatment Design

Treat wounds with a non-contact handpiece (a “non-roller ball” handpiece) to avoid handpiece contamination. Scan wounds in a grid pattern to ensure uniform treatment.

Laser therapy cannot be administered through bandage material. Design treatments to coincide with bandage changes, every-other-day, or every three days.

The authors recommend treating deep wounds with the Contaminated Wound protocol, adjusting the power based on measurements of the affected target area. Estimate the size of the area being treated and use the appropriate setting below.

CTL-10

Treatment Area [in.]	Power [Watts]	# of cycles through protocol
1 x 2	2.0	1
2 x 2	3.5	1
2 x 3	5.0	1
2 x 4	7.0	1
3 x 4	5.0	2
3 x 5	6.5	2
4 x 5	8.5	2
4 x 6	7.0	3
6 x 8	8.5	4

Protocol Used:
Contaminated Wound Protocol

CTL-6

Treatment Area [in.]	Power [Watts]	# of cycles through protocol
1 x 2	2.0	1
2 x 2	3.5	1
2 x 3	5.0	1
2 x 4	3.5	2
3 x 4	5.0	2
3 x 5	4.5	3
4 x 5	6.0	3
4 x 6	5.0	4
6 x 8	6.0	6

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