The only levothyroxine sodium equine powder formulated to meet the USP Powder Standard.

Why Thyro-L®?

- Levothyroxine Sodium Powder, USP for predictable therapeutic results
- Adjunct treatment for weight loss in horses with insulin resistance
  - Aid in laminitis prevention
  - Aid in preventing hyperlipidemia

Thyro-L®, the original levothyroxine sodium powder, remains the market-leader for a reason—it performs. With unparalleled expertise in stable levothyroxine powder formulations, LLOYD delivers the therapeutic results you expect—consistently.

Whether from a newly manufactured lot, or one nearing expiration, every dose of Thyro-L® quality is guaranteed. True to LLOYD’s value commitment, you can be assured that your patient is receiving the supplement as prescribed, from beginning to end.

1-800-831-0004
**Thyro-L®**
Levothyroxine sodium powder, USP

**HOW SUPPLIED**
One-pound bottles and ten-pound pails.
Teaspoon measure included in each bottle or pail.

**INDICATIONS**
For use in horses for correction of conditions associated with low circulating thyroid hormone (hypothyroidism).

**DOSEAGE**
The suggested initial dose is 0.5 to 3.0 mg of levothyroxine sodium per 100 pounds body weight (1 to 6 mg per 100 kg) once per day or in divided doses. The recommended daily dose is 1/2 to 2 1/2 level teaspoons for a 500 kg (1,100 lb) horse.

Response to the administration of Thyro-L should be evaluated clinically until an adequate maintenance dose is established. In most horses, this is usually in the range of 6 to 36 mg (1/2 to 3 level teaspoons) daily total dose of T-4. Serum T-3 and T-4 values can vary greatly among individual horses on thyroid supplementation. Dosages should be individualized and animals should be monitored daily for clinical signs of hypothyroidism or hypersensitivity.

**ADMINISTRATION**
Thyro-L can be administered by mixing the daily dose in the concentrate or by top dressing on grain, preferably rolled or ground. To facilitate proper adhesion of Thyro-L to the ration, slightly moisten the grain with water or liquid supplement.

**WARNING**
Administer with caution to animals with clinically significant heart disease, hypertension or other complications for which a sharply increased metabolic rate might prove hazardous. Use in pregnant mares has not been evaluated.

**INGREDIENTS**
Each pound (453.6 g) contains:
Levothyroxine Sodium USP........................................0.22% (1,000 mg)
Each level teaspoon contains approximately 12 mg of T-4.

**CAUTION**
Federal law restricts this drug to use by or on the order of a licensed veterinarian.

Store at room temperature. Protect from light.
Avoid excessive heat (30°C or 86°F).

**KEEP OUT OF REACH OF CHILDREN**

**IN PRACTICE**

**Thyro-L in the Medical Management of Insulin Resistant Obesity**

Equine obesity has become a significant health concern primarily because of its association with Insulin Resistance (IR) and laminitis. Chronic IR results from the body’s inability to respond to insulin, which subsequently diminishes effective glucose utilization. IR is believed to influence laminitis through mechanisms of distal vasoconstriction, exaggerated inflammatory response, platelet stimulation, and reduced capillary recruitment. It is these effects that are thought to interfere with the body’s ability to supply glucose to the hooves. Obesity further exacerbates this condition through the lipotoxic effects of elevated free fatty acids (FFA) and the pro-inflammatory state created as monocytes migrate into adipose tissues. The increased force placed on dermal-epidermal attachments in the hoof of these animals is also likely to influence the development of laminitis.

Insulin resistance is a primary component of Equine Metabolic Syndrome (EMS), also characterized by regional adiposity, hypertriglyceridemia, hyperleptinemia, and increased laminitis risk. Effective management of obese IR and EMS horses is focused on feeding a low non-structural carbohydrate grass hay. Use of IR-specific supplements like Target IR®, are a common approach to counteract the risk of vitamin and mineral deficiencies with a restricted, grass-hay only diet. Incorporation of a consistent exercise regimen and elimination of pasture grazing are also key components in managing insulin resistance.

When management practices fail to reduce body mass, short term medical therapy may be indicated. According to work performed by Nicholas Frank, DVM, PhD, ACVIM, and others at the University of Tennessee College of Veterinary Medicine and elsewhere, Thyro-L can be used to accelerate weight loss in these animals, safely and effectively.

**Research Findings**

Thyro-L can be administered to horses with IR/EMS to accelerate weight loss and improve insulin sensitivity. A greater than twofold increase in mean insulin sensitivity was detected, with coinciding body weight reduction, when levothyroxine sodium was administered to healthy mares at dosages ranging from 24-96 mg/day over 8 weeks.

**Administration**

Thyro-L can be administered by mouth or in the feed at a dosage of 48 mg (4 tsp) per day for 3-6 months to induce weight loss. Smaller ponies and Miniature horses can receive 24 mg/day for the same time period. Treated horses should be weaned from Thyro-L once ideal weight has been attained by reducing the dosage to 24 mg (2 tsp) for 1 week, followed by 12 mg (1 tsp) per day for an additional 2 weeks.

**REFERENCES**


**Product Name**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Product Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thyro-L®</td>
<td>0481</td>
</tr>
<tr>
<td>1 lb bottle</td>
<td></td>
</tr>
<tr>
<td>Thyro-L®</td>
<td>0482</td>
</tr>
<tr>
<td>10 lb pail</td>
<td></td>
</tr>
</tbody>
</table>

Manufactured by

**LLOYD, Inc.**
P.O. Box 130
Shenandoah, IA 51601 USA
1-800-831-0004
www.lloydinc.com

**Am J Vet Res**
2008;69:76-81.

**J Equine Vet Sci**

**IN PRACTICE**

**Thyro-L in the Medical Management of Insulin Resistant Obesity**

Equine obesity has become a significant health concern primarily because of its association with Insulin Resistance (IR) and laminitis. Chronic IR results from the body’s inability to respond to insulin, which subsequently diminishes effective glucose utilization. IR is believed to influence laminitis through mechanisms of distal vasoconstriction, exaggerated inflammatory response, platelet stimulation, and reduced capillary recruitment. It is these effects that are thought to interfere with the body’s ability to supply glucose to the hooves. Obesity further exacerbates this condition through the lipotoxic effects of elevated free fatty acids (FFA) and the pro-inflammatory state created as monocytes migrate into adipose tissues. The increased force placed on dermal-epidermal attachments in the hoof of these animals is also likely to influence the development of laminitis.

Insulin resistance is a primary component of Equine Metabolic Syndrome (EMS), also characterized by regional adiposity, hypertriglyceridemia, hyperleptinemia, and increased laminitis risk. Effective management of obese IR and EMS horses is focused on feeding a low non-structural carbohydrate grass hay. Use of IR-specific supplements like Target IR®, are a common approach to counteract the risk of vitamin and mineral deficiencies with a restricted, grass-hay only diet. Incorporation of a consistent exercise regimen and elimination of pasture grazing are also key components in managing insulin resistance.

When management practices fail to reduce body mass, short term medical therapy may be indicated. According to work performed by Nicholas Frank, DVM, PhD, ACVIM, and others at the University of Tennessee College of Veterinary Medicine and elsewhere, Thyro-L can be used to accelerate weight loss in these animals, safely and effectively.

**Research Findings**

Thyro-L can be administered to horses with IR/EMS to accelerate weight loss and improve insulin sensitivity. A greater than twofold increase in mean insulin sensitivity was detected, with coinciding body weight reduction, when levothyroxine sodium was administered to healthy mares at dosages ranging from 24-96 mg/day over 8 weeks.

**Administration**

Thyro-L can be administered by mouth or in the feed at a dosage of 48 mg (4 tsp) per day for 3-6 months to induce weight loss. Smaller ponies and Miniature horses can receive 24 mg/day for the same time period. Treated horses should be weaned from Thyro-L once ideal weight has been attained by reducing the dosage to 24 mg (2 tsp) for 1 week, followed by 12 mg (1 tsp) per day for an additional 2 weeks.

**REFERENCES**


**Product Name**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Product Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thyro-L®</td>
<td>0481</td>
</tr>
<tr>
<td>1 lb bottle</td>
<td></td>
</tr>
<tr>
<td>Thyro-L®</td>
<td>0482</td>
</tr>
<tr>
<td>10 lb pail</td>
<td></td>
</tr>
</tbody>
</table>

Manufactured by

**LLOYD, Inc.**
P.O. Box 130
Shenandoah, IA 51601 USA
1-800-831-0004
www.lloydinc.com