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80 Causes, predispositions, and pathways of laminitis
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80 CAUSES, PREDISPOSITIONS, AND PATHWAYS OF LAMINITIS

by Henry Heymering

For most of history the causes of laminitis have been based on observations, however, in the last 30 years or so, the number of theories has exploded, with only a few being confirmed by experiments. In the following list, plain text indicates theory only; *italics* indicates observation; underlined indicates disproved causes; and **bold** indicates proved causes. The citations may speak for, or against, or both.

Circulation

AVA shunts¹
Coagulopathy²³
Mechanical Damage –
Road founder⁴⁵
Lack of circulation from inactivity –
Supporting leg⁶
Ship travel⁷
Being kept in slings⁸
Trauma to the hoof – crushed under a wheel⁹
Over-rehydration¹⁰
Reperfusion¹¹¹²
Starling forces – edema¹³¹⁴¹⁵
Vasoconstriction¹⁶
Vasodilation¹⁷¹⁸¹⁹

Endocrine

Equine Cushings Disease²⁰
Equine Metabolic Syndrome²¹
Estrogen –
 From plants²²
 From pregnancy²³
Hyperadrenocorticism/cortisol²⁴
Hypothyroidism²⁵²⁶
Insulin Resistance²⁷
Insulin²⁸
Mares that do not come into heat²⁹
Mares that are in continual heat³⁰
Testosterone³¹³²

Enzymes

MMP2 & MMP9³³

Hoof nutrients (lack)

Glucose³⁴

Methionine keratin synthesis blocked³⁵³⁶

Inflammation / edema

Allergy³⁷

Iron excess³⁸³⁹

Stress

*Colic*⁴⁰

Cold snaps (John Arkley, Palmer, AK personal communication June 2002)

*Draft/chill*⁴¹

*Drinking cold water when hot*⁴²

*Heat*⁴³⁴⁴

Hypertension⁴⁵⁴⁶⁴⁷

*Parturition*⁴⁸

*Standing in cold water after hard riding*⁴⁹

*Superpurgation*⁵⁰

Toxins

Avacado⁵¹

Bee stings in great number – e.g. 100 (personal observation)

Black walnut (*Juglans nigra*)⁵²

*Endophytes*⁵³⁵⁴

*Endotoxins*⁵⁵

*Exotoxins*⁵⁶⁵⁷

*Histamine*⁵⁸⁵⁹⁶⁰⁶¹

*Hoary alyssum (*Berteroa incana*)*⁶²

Infections –

*Allisonella histiminiformans*⁶³

*B. coli*⁶⁴

*Bacterial lung infections*⁶⁵

*Intestinal infections*⁶⁶

*Lyme disease*⁶⁷

*Potomac Horse Fever*⁶⁸

*Retained placenta*⁶⁹

*S. Equi*⁷⁰

*Streptococcus bovis*⁷¹

*Viral respiratory infections*⁷²

Mercury⁷³

Overeating –

Acidosis⁷⁴⁷⁵
*Beet tops*⁷⁶
*Barley*⁷⁷
Carbohydrates (starch)⁷⁸
Fructans⁷⁹
*Grain*⁸⁰
*Lactic acid*⁸¹⁸²
*Pasture*⁸³
*Protein*⁸⁴⁸⁵
Rattlesnake venom⁸⁶
Red oak⁸⁷
Selenium⁸⁸
*Toxic amines*⁸⁹⁹⁰

Miscellaneous

*Abdominal surgery*⁹¹
*Colic*⁹²
*Corticosteroid administration*⁹³⁹⁴
*Deworming/Anthelmintics*⁹⁵⁹⁶⁹⁷
Fatty liver⁹⁸
*Genetics*⁹⁹
*High nerving*¹⁰⁰
Kidney disease (Burney Chapman, Lubbock, TX, personal communication, June 1992)
*Phenylbutazone*¹⁰¹
*Strasser trim*¹⁰²
Tumor necrosis factor¹⁰³
*Vaccinations*¹⁰⁴¹⁰⁵

Of the dozens of suspected causes of laminitis, only four have been shown to reliably create laminitis for the purposes of research (starch;¹⁰⁶ black walnut;¹⁰⁷ fructose;¹⁰⁸ and insulin¹⁰⁹). Laminitis has also been caused experimentally by subcutaneous injection, or repeated intravenous injection, of histamine; and by lactic acid injected into the rumen of sheep.

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