

LAMINITIS

Grayson-Jockey Club Research Archives

A disease where the tissues that attach the hoof to the underlying coffin bone become damaged and inflamed. It not only leads to loss of performance but is second only to colic as the biggest cause of premature death in horses. There are three "types" of laminitis:

Endocrine - generally occurs secondary to equine metabolic syndrome and pituitary pars intermedia dysfunction (PPID, equine Cushing's disease).

Sepsis - develops following a systemic illness such as colitis, metritis, pneumonia, grain overload, etc.

Supporting-limb - develops after a musculoskeletal injury in the opposite limb, as the horse bears excessive weight on the supporting limb.



Grayson is proud to have funded the following projects in finding answers to Laminitis.

[AMPK Agonist Combination Therapy and ID in Horses](#)

The Ohio State University, *Principal Investigator: Teresa Burns*

Co-PI: Laura K. Dunbar

By completing this work, this study was designed to characterize a combination therapy to improve equine insulin resistance that is administered orally and well tolerated.

Years: 2020-2021 TOTAL - 151,121

[Endocrinopathic Laminitis: Pathophysiology and Treatment](#)

The Ohio State University, *Principal Investigator: James Belknap*

Co-PIs: Teresa Burns, (Heads Lab); Mauria R. Watts; Andrew van Eps (UN of Queensland)

The purpose of this study was to determine if continuous digital hypothermia is effective and therefore indicated in the management of endocrinopathic laminitis, the most common form of the disease.

Years: 2017-2018 TOTAL - \$116,148

[Prevention of Supporting Limb Laminitis](#)

University of Queensland, *Principal Investigator: Andrew Van Eps*

Co-PIs: Dean Richardson (Cornell), James Belknap & Mauria Watts (Ohio State)

This study was set up to show the potential efficacy of a novel pneumatic boot to prevent lamellar changes leading to supporting limb laminitis and may provide an effective clinical preventive.

Years: 2015-2016 TOTAL - \$188,169

[Events Affecting Laminar Adhesion in Equine Sepsis](#)

The Ohio State University, *Principal Investigator: James Belknap*

Co-PI: Mauria Watts, Andrew Van Eps (UN of Queensland), Scott Napper (UN of Saskatchewan)

This project looked into providing targets for pharmaceutical therapies to either replace or augment continuous digital hypothermia.

Years: 2014-2015 TOTAL - \$165,391

Weight Bearing; Perfusion and Bioenergetics in Laminitis

University of Queensland, *Principal Investigator: Andrew Van Eps*

Co-PIs: Dean Richardson (Cornell), James Belknap & Mauria Watts (Ohio State)

This research was designed to confirm the cause of supporting limb laminitis and to test potential therapeutic interventions.

Years: 2014-2015 TOTAL - \$82,125

Laminar Signaling in Supporting Limb Laminitis

The Ohio State University, *Principal Investigator: James Belknap*

Co-PI: Samuel Black (UN of MA)

Years: 2012-2013 TOTAL - \$131,740

Targeting 5-HT in Equine Laminitis

University of Georgia, *Principal Investigator: Thomas Robertson*

Co-PIs: Benjamin Brainard; James Moore; Robert Arnold; John Peroni

Years: 2012-2013 TOTAL - \$50,292

Digital Hypothermia in Laminitis: Timing & Signaling

The Ohio State University, *Principal Investigator: James Belknap*

Co-PIs: Andrew van Eps; Mauria Watts

Years: 2011-2012 TOTAL - \$88,522

Lamellar Energy Failure in Supporting Limb Laminitis

The University of Queensland, *Principal Investigator: Andrew van Eps*

Co-PIs: Simon Collins; Christopher Pollitt; Dean Richardson (UN of PA)

Years: 2011-2012 TOTAL - \$81,060

In Vivo Gene Transfer for Laminitis

University of Pennsylvania, *Principal Investigator: Dean Richardson*

Co-PIs: Jeffrey Mason; Andrea Phillips; James Wilson

Years: 2010-2011 TOTAL - \$70,865

Endotoxemia as Predisposing Factor for Laminitis

University of Tennessee, *Principal Investigator: Nicholas Frank*

Year: 2010 TOTAL - \$41,490

Effect of Digital Hypothermia on Inflammatory Injury in Laminitis

The Ohio State University, *Principal Investigator: James Belknap*

Co-PI: Mauria Watts

Years: 2008-2009 TOTAL - \$82,109

Transcriptomics and Proteomics of Equine Laminitis

University of Pennsylvania, *Principal Investigator: Hannah Galantino-Homer*
Co-PIs: Neal Rubinstein; James Orsini; Chris Politt (UN of Queensland Australia)
Years: 2008-2009 TOTAL - \$137,269

Efficacy of Lidocaine in the Treatment of Equine Laminitis

The Ohio State University, *Principal Investigator: James Belknap*
Co-PI: Samuel J. Black
Years: 2007-2008 TOTAL - \$80,747

Levothyroxine as a Treatment for Insulin Resistance

University of Tennessee, *Principal Investigator: Nicholas Frank*
Years: 2007-2008 TOTAL - \$56,876

Leukocyte & Vascular Function in Endotoxemia & Laminitis

University of Georgia, *Principal Investigator: Thomas Robertson*
Co-PIs: David Hurley; John Peroni; Thomas Krunkosky
Year: 2007 TOTAL - \$29,852

Use of Microarrays to Characterize Endotoxemia in Vivo

University of Georgia
Principal Investigator: Michel L. Vandenplas
Co-PIs: J. Moore; M. Cordonnier-Pratt; L Pratt
Year: 2005 TOTAL - \$22,745

Efficacy of Recombinant Equine Gonadotropins

University of California - Davis
Principal Investigator: Janet Roser
Co-PI: Irving Boime
Year: 2004 TOTAL - \$51,258

Ischemia-Reperfusion Injury in Equine Lamellar Arteries

University of Georgia
Principal Investigator: Stephen Lewis
Co-PIs: John Peroni; Jon Graves; Tom Robertson
Years: 2003-2004 TOTAL - \$56,000

Role of Endothelin-1 in the Pathophysiology of Equine Laminitis

Louisiana State University, *Principal Investigator: Rustin Moore*
Co-PI: S. C. Eades
Year: 2003 TOTAL - \$53,430

Functional Analyses of Equine Laminar Arteries

University of Georgia

Principal Investigator: John Peroni

Co-PIs: Stephen Lewis; Jon Graves

Years: 2002-2003 TOTAL - \$44,089

Role of Endothelin and Nitric Oxide in Equine Laminitis

Louisiana State University, *Principal Investigator: Rustin Moore*

Co-PIs: Susan Eades; Ashley Holm; C.S. Venugopal; Julian Oliver

Years: 1999-2000 TOTAL - \$89,892