

Safe and Sound

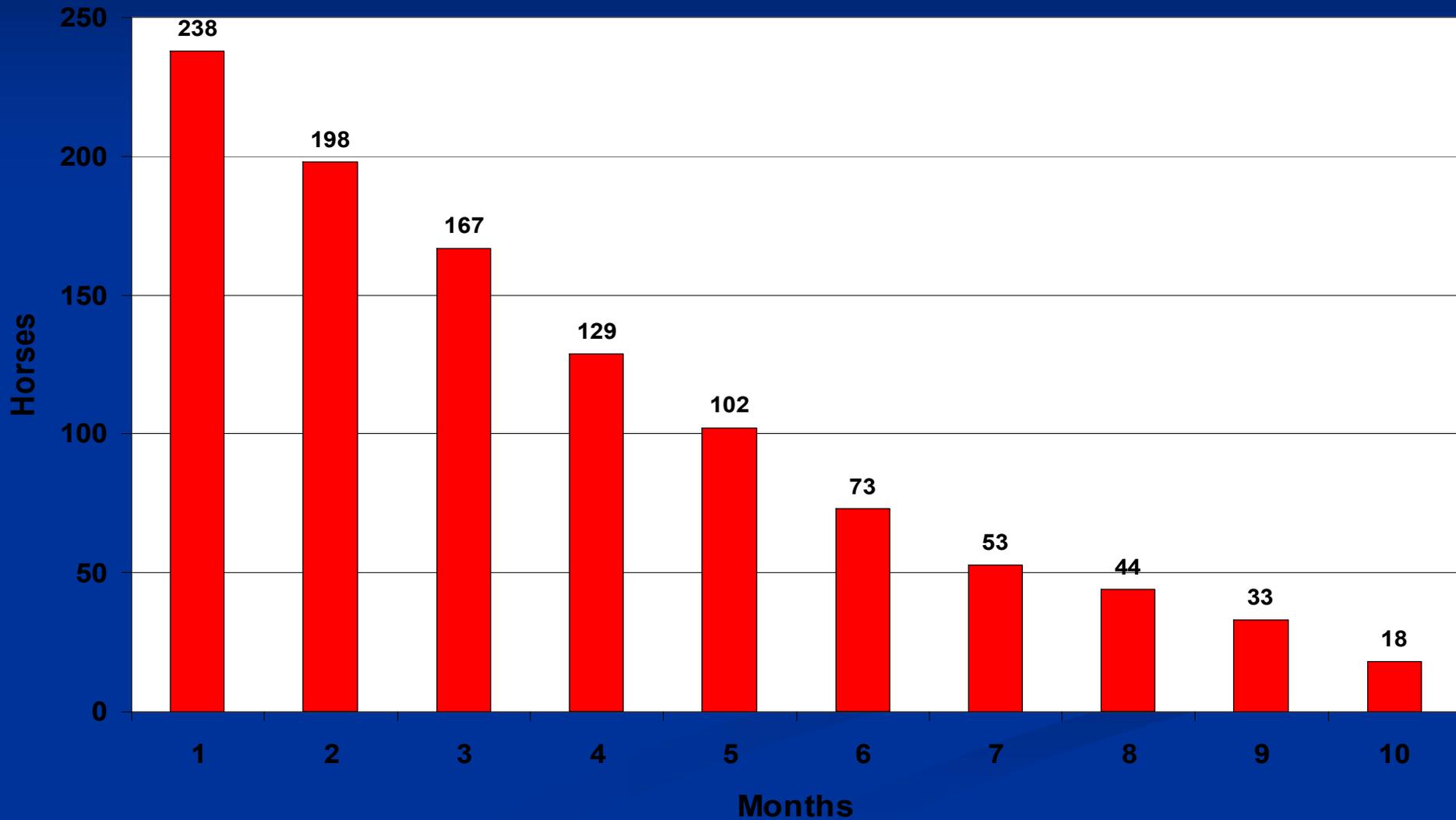
Rick M. Arthur, DVM
Equine Medical Director
UC Davis/CHRB



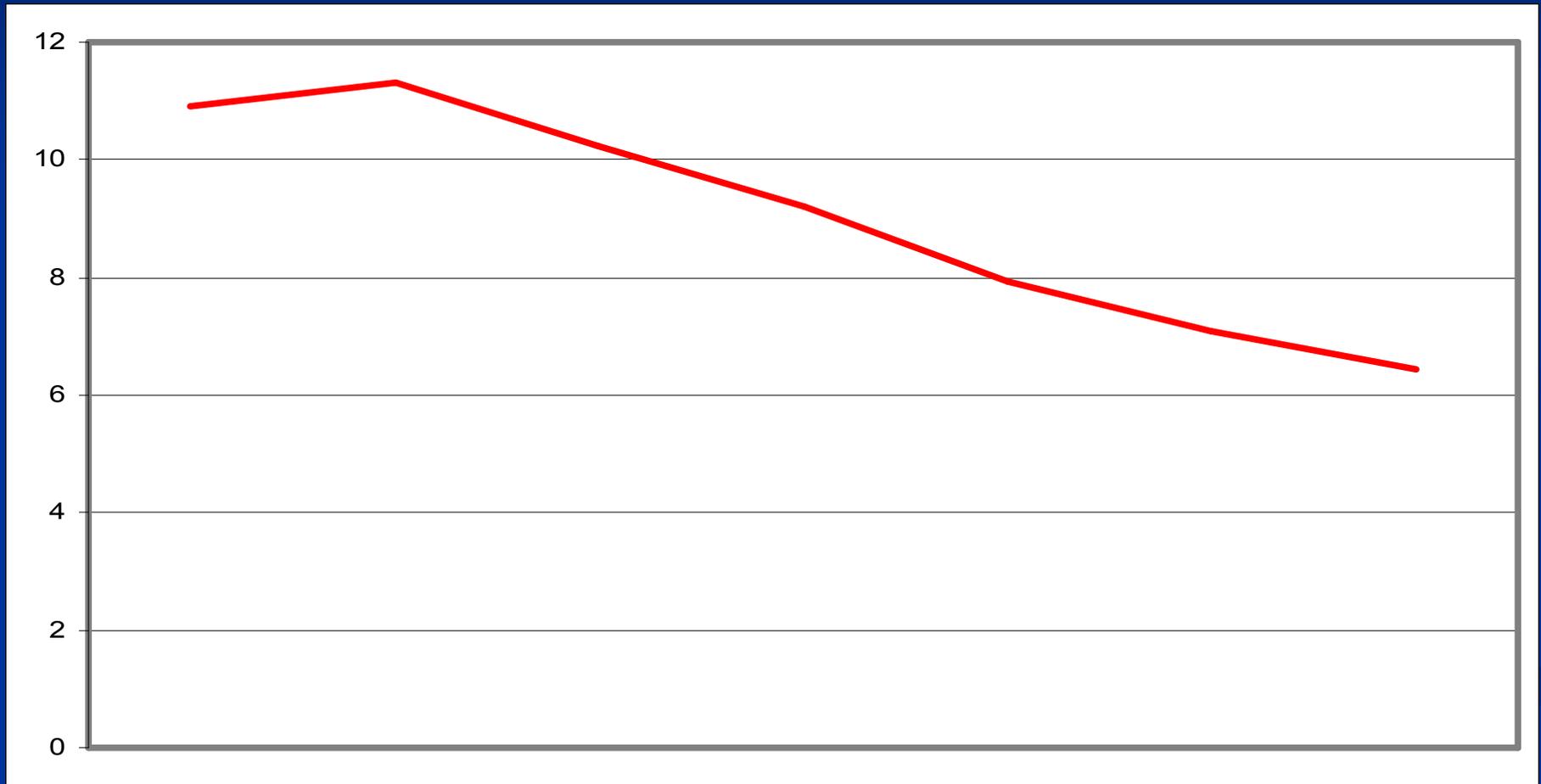
CSU-Grayson/Jockey Club Study

- 238 Two and Three year olds began the study in March 2002
 - Horses left the Study for Three Reasons:
 - Experienced a musculoskeletal injury which required a >30 day rest
 - Out of training for > 30 days for other reasons
 - Lost to Study
 - Claimed, sold, or otherwise changed trainers
 - Sent to Northern California or elsewhere

CSU-Grayson/Jockey Club Study



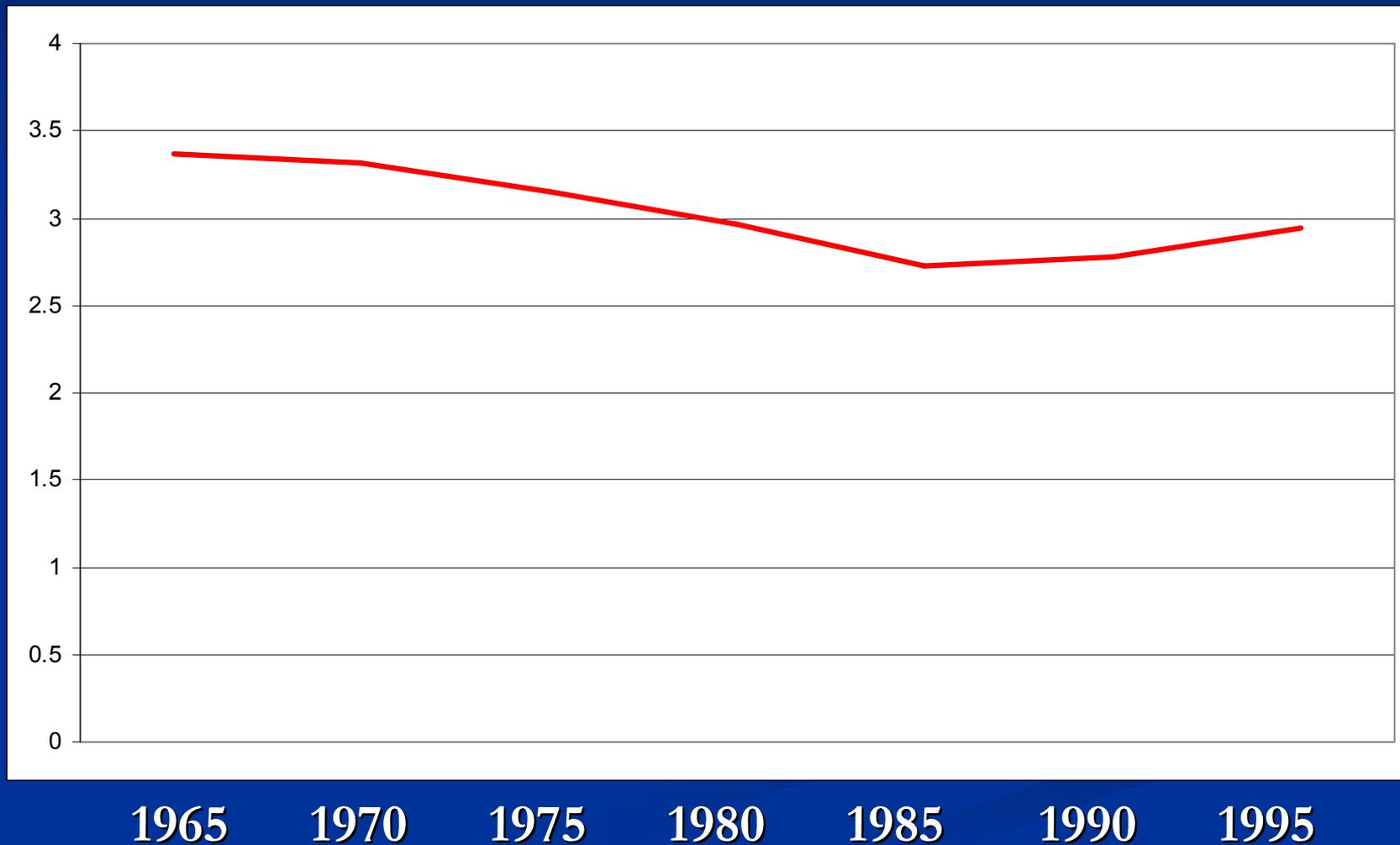
Starts per Starter by Year



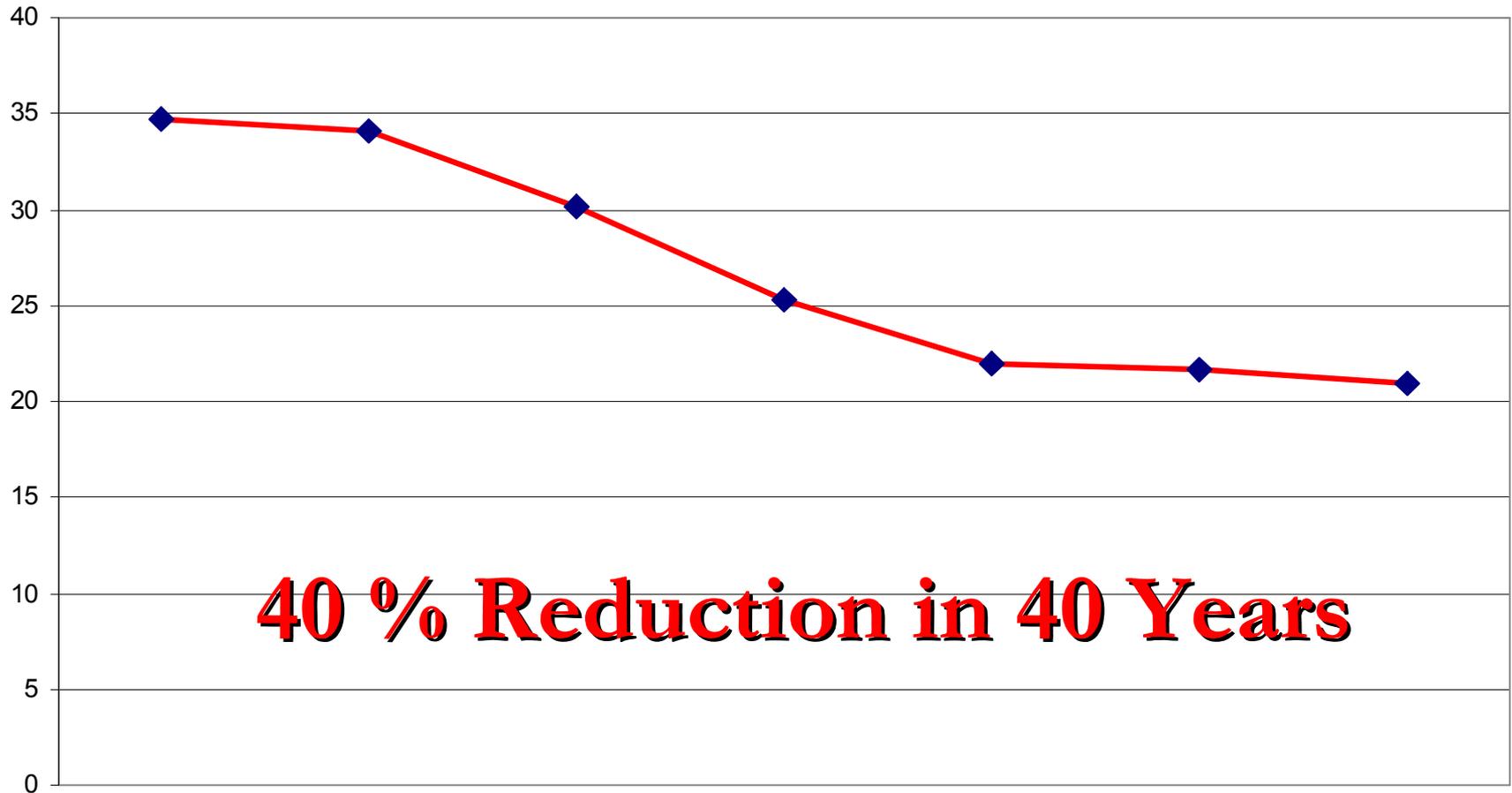
1950

2005

Years Raced



Total Starts per Starter



40 % Reduction in 40 Years

1965

1970

1975

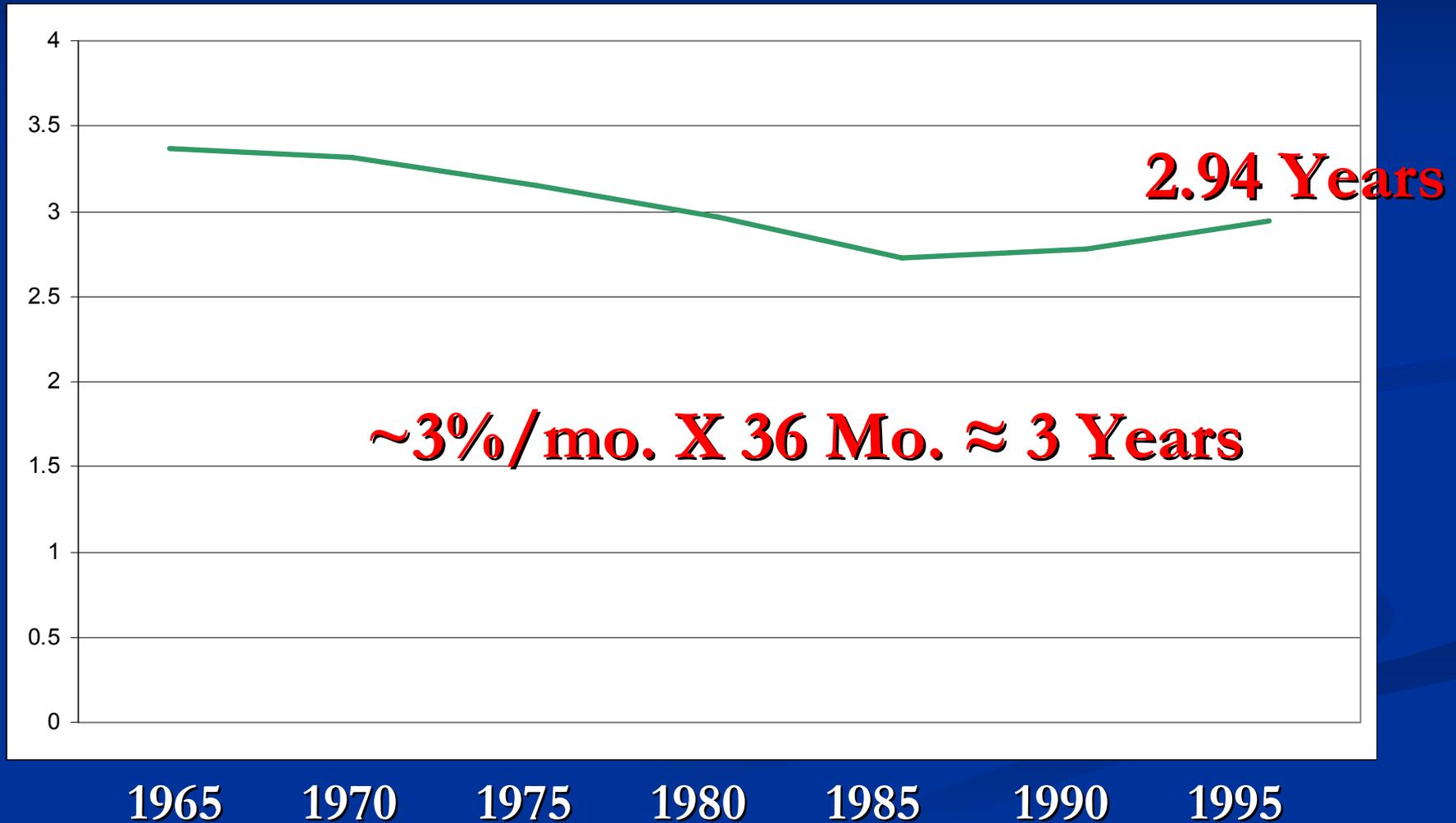
1980

1985

1990

1995

Years Raced



Wastage

- Overall loss is about
 - ~ 3% of its Horses are lost per month
 - 69,569 Starters in 2000
- $3\% \times 69,569 @ \$25,000^*$ per horse =
- \$ 52,176,750 / month

*Approximate Mean price of a horse at auction



Since Feb 1991

- > 4,000 racehorses have been necropsied

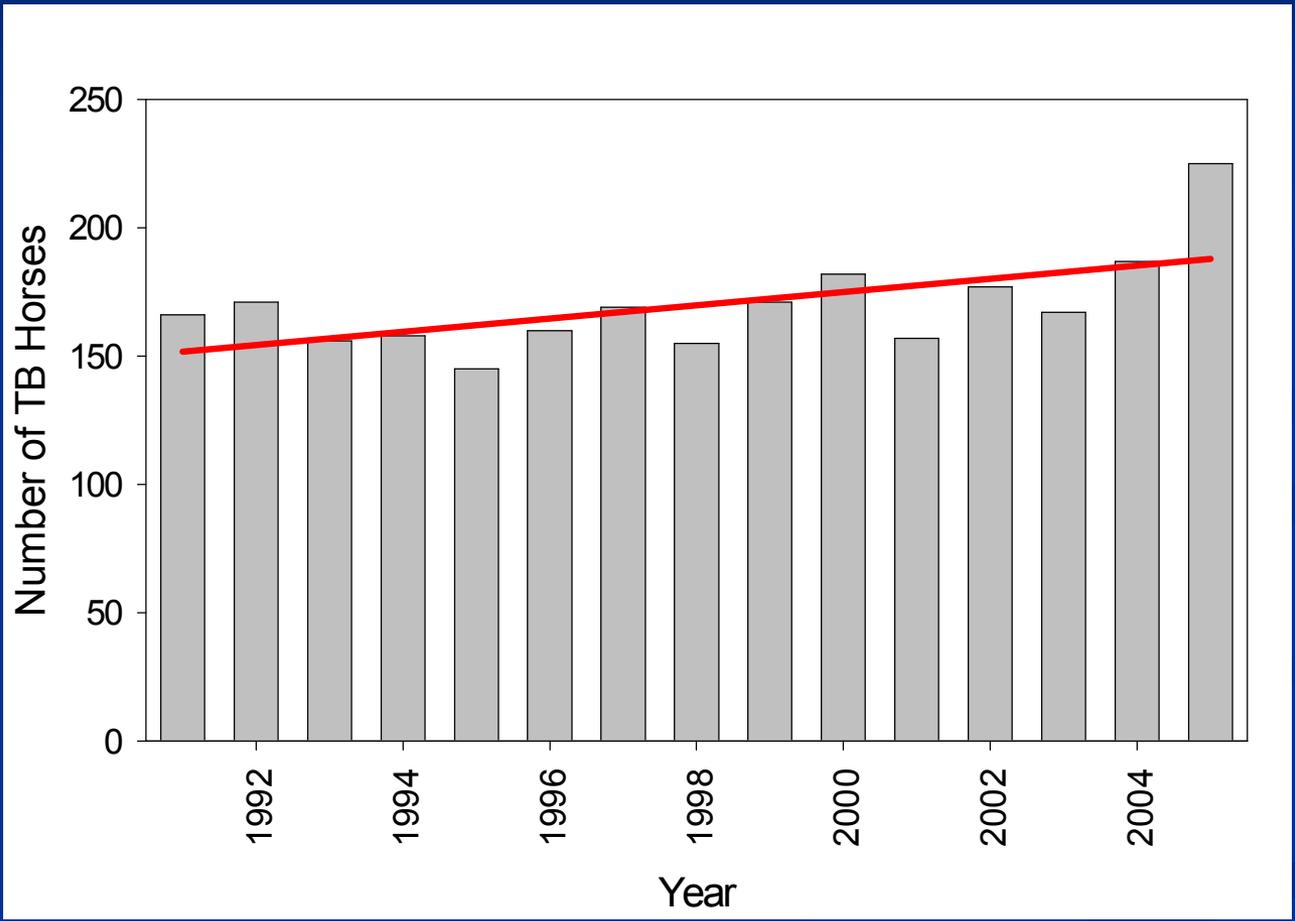
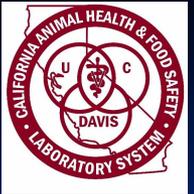


In 2005 ...

- 342 racehorses died at CA racetracks
 - 264 (77%) Thoroughbred horses
- 266 (78%) deaths were due to injuries
 - 46% racing / 34% training

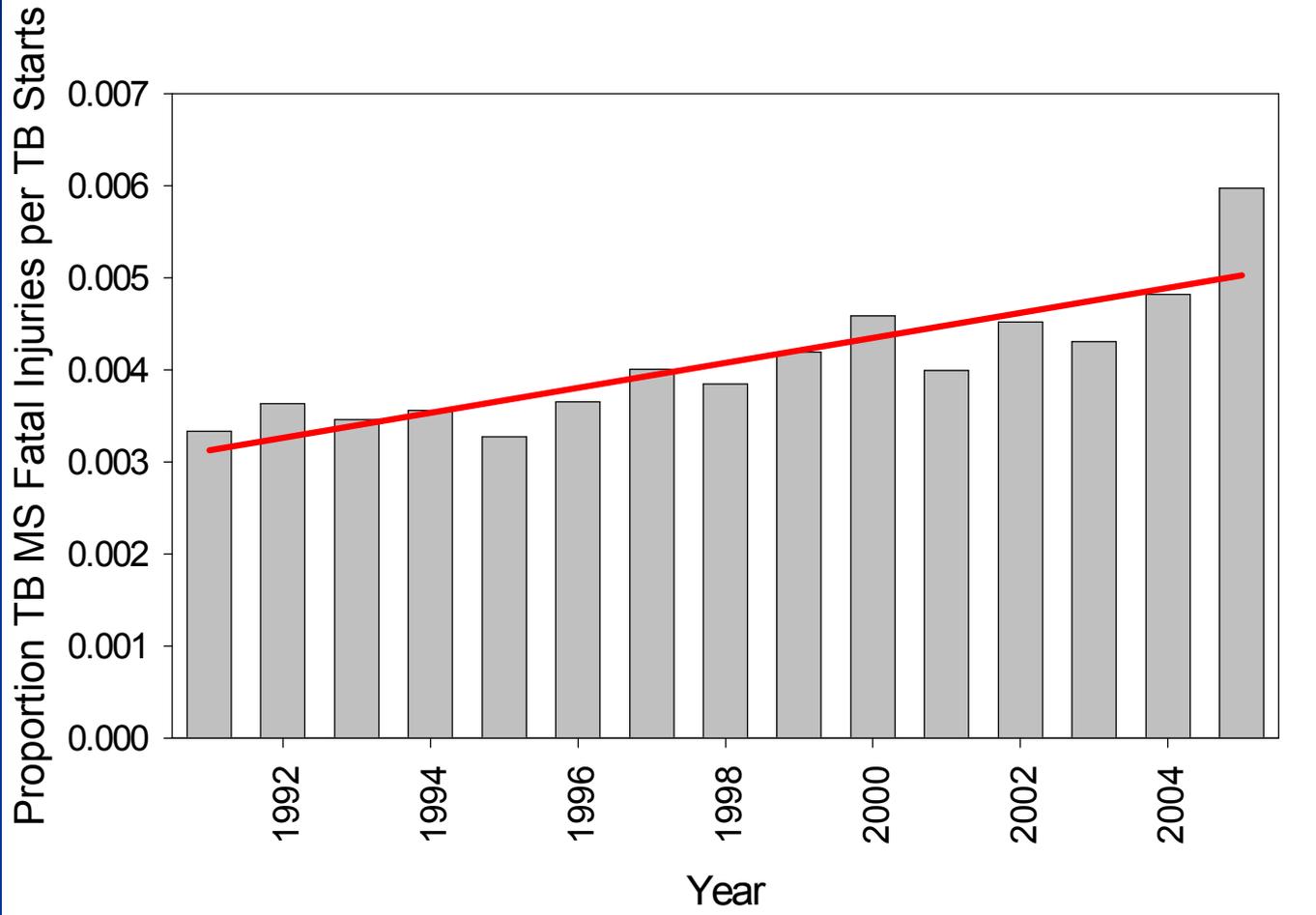


CA TB Racehorse Fatalities



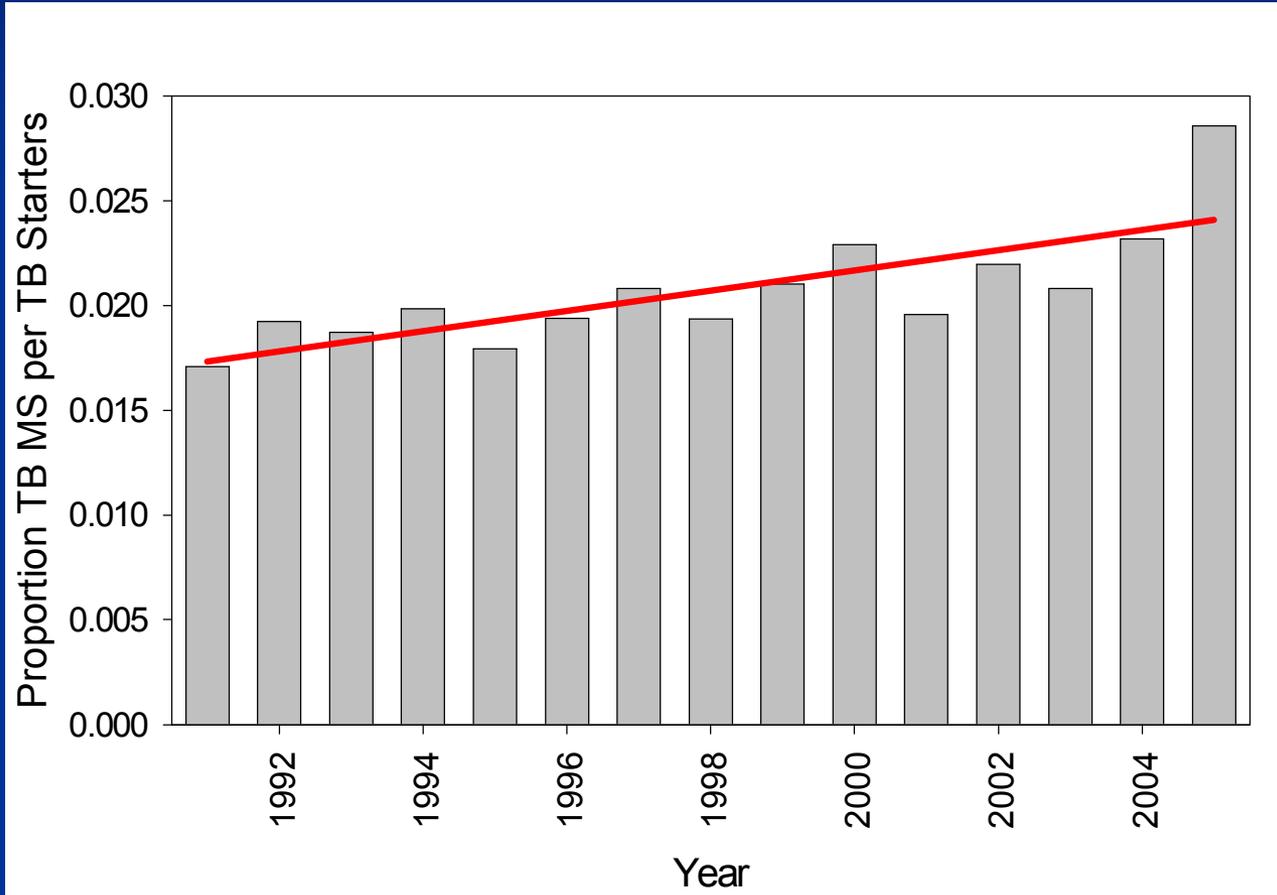


TB MS Fatal Injuries / Starts by Year





TB MS Fatal Injuries / Starters by Year



Race Surfaces



- Epidemiology results are *inconsistent*
 - dirt vs turf
 - soft vs hard
 - all-weather vs other
 - sand
 - fast vs slow

Parkin, et al. Equine Vet J 2004;36:513-519

Oikawa and Kusunose. Vet J 2005;170:369-374

Henley, et al. Prev Vet Med 2006;74:3-20

Hill, et al. Cornell Vet 1986;76:361-369

Hill, et al. JAVMA 2001;218:1136-1144

Mohammed, et al. Equine Vet J 1991;23:445-448

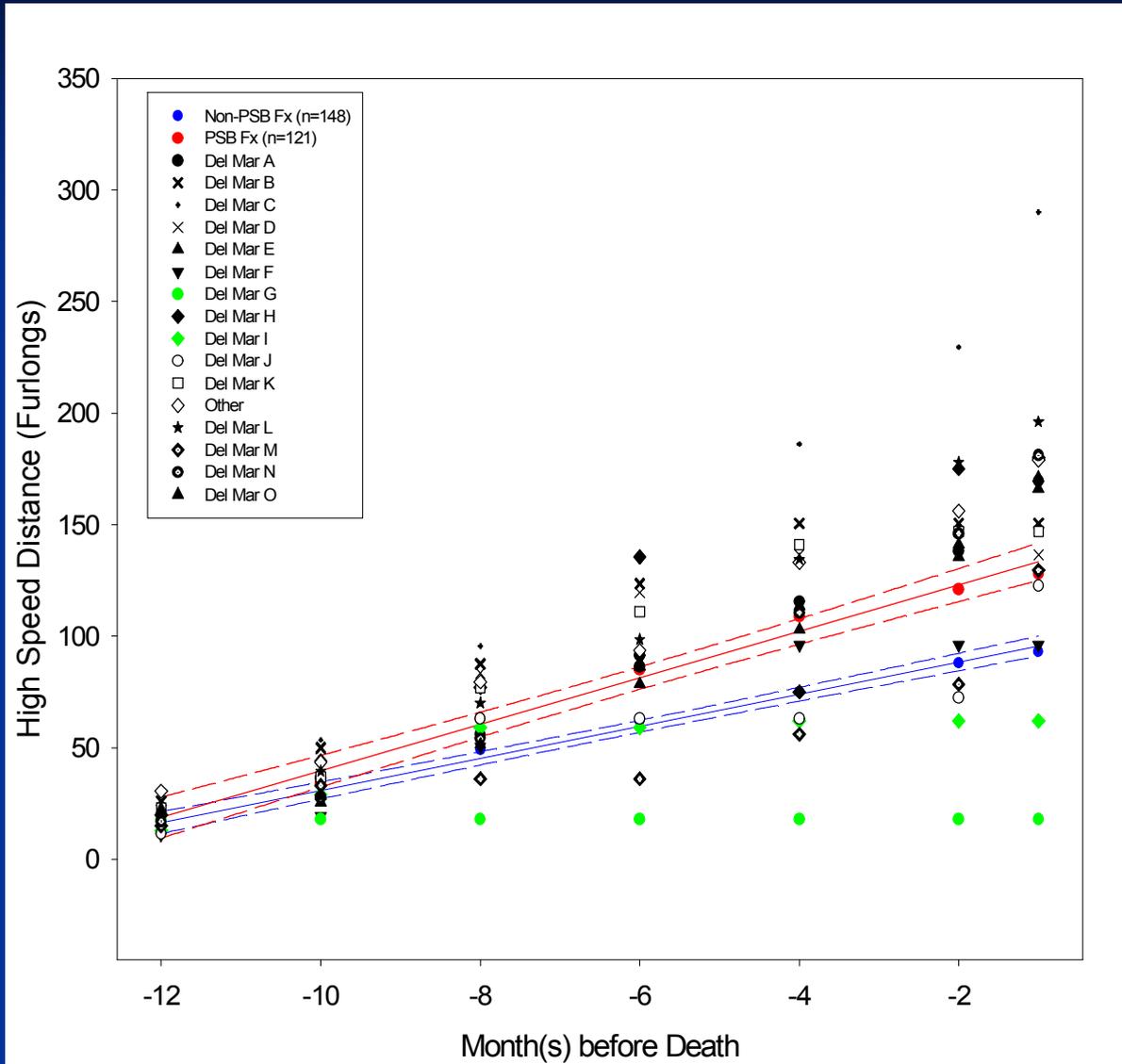
Hernandez, et al. JAVMA 2001;218:83-86

Moyer, et al. Equine Vet J. 1991;23:166-168

Race Surface

- Affects magnitude and character of load transfer between the ground and hoof, and limb mechanics
 - Consistency
 - Compliance, shear
 - Geometry, banking
- Need for additional approaches to reduce confounding variables
 - direct race surface measurements
 - *in-vitro* studies
 - modeling approaches
 - *in-vivo* studies

Racetrack 'Effect'



Cushion



Polytrack



Cushion



Polytrack



Pre-race Physical Findings

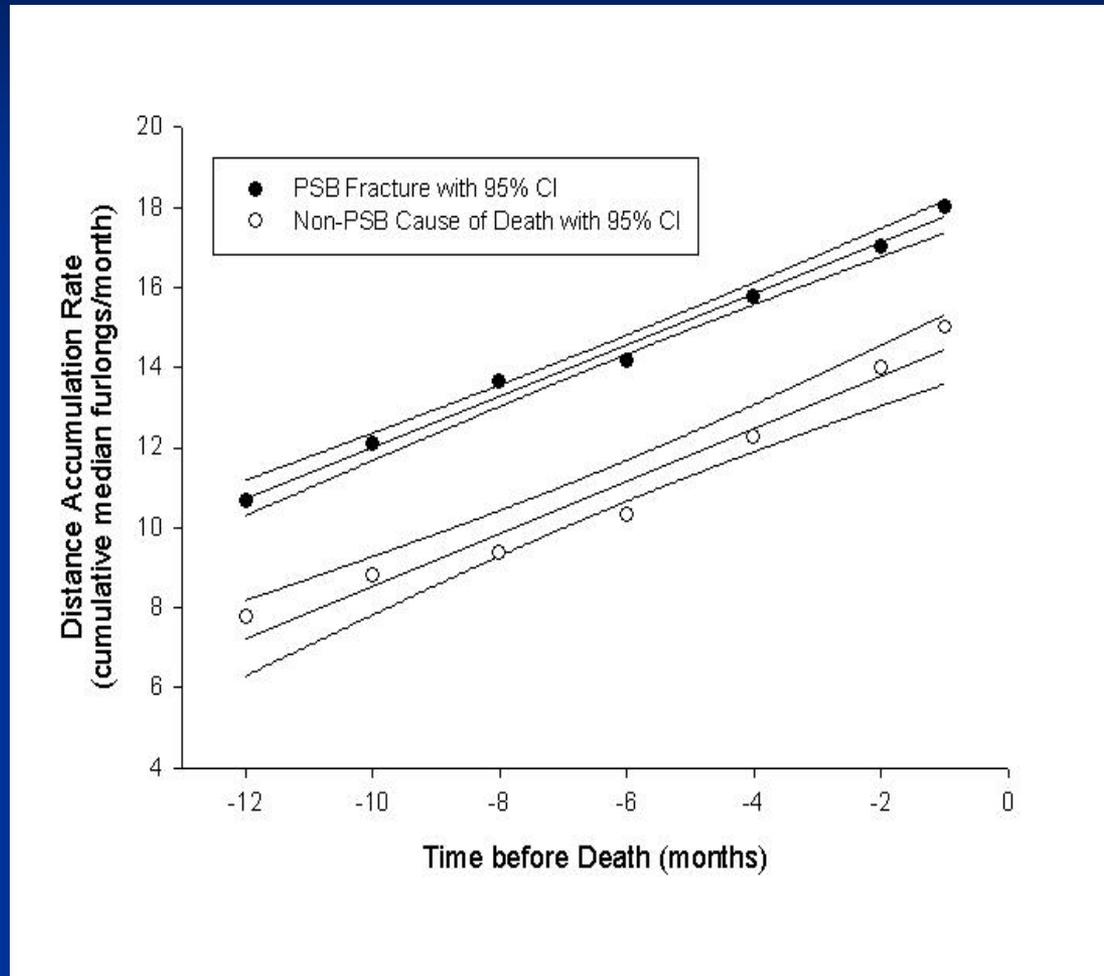
- 5-18 times increased risk with positive assessment
 - Low incidence of injury in associated race limits implementation



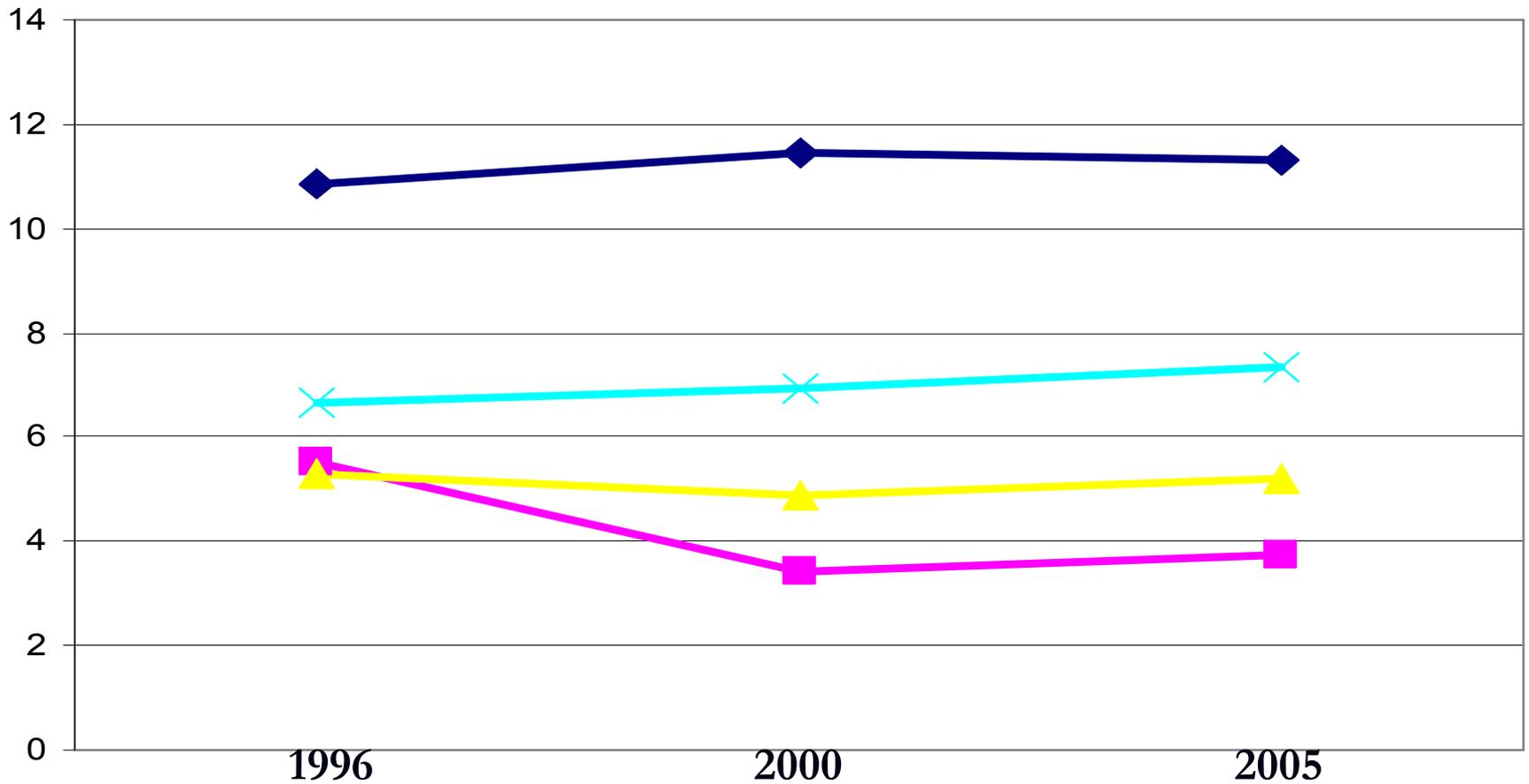
Cohen, et al. JAVMA 2000;216:1273-1278

Cohen, et al. JAVMA 1997;211:454-463

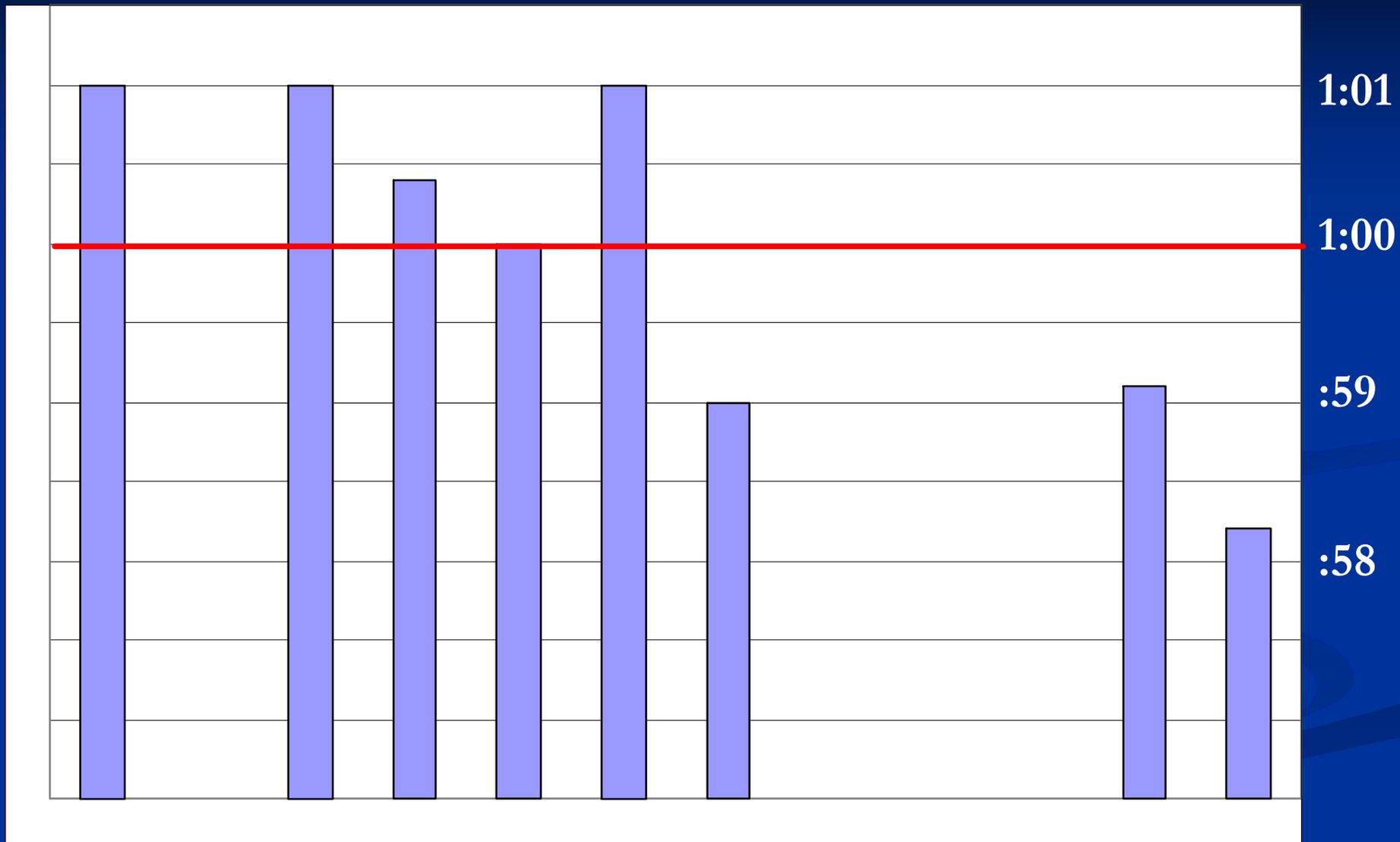
Rates of Distance Accumulation



Works to Starts



Fastest 5F Works Santa Anita



40

50

55

60

65

70

95

'00

Increased Risk for SAF

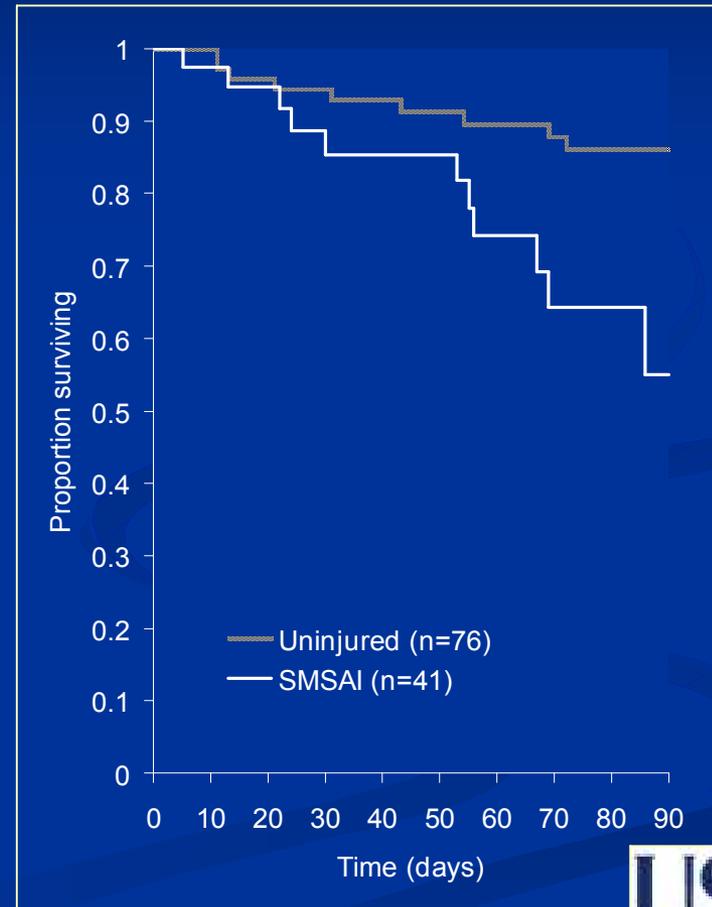
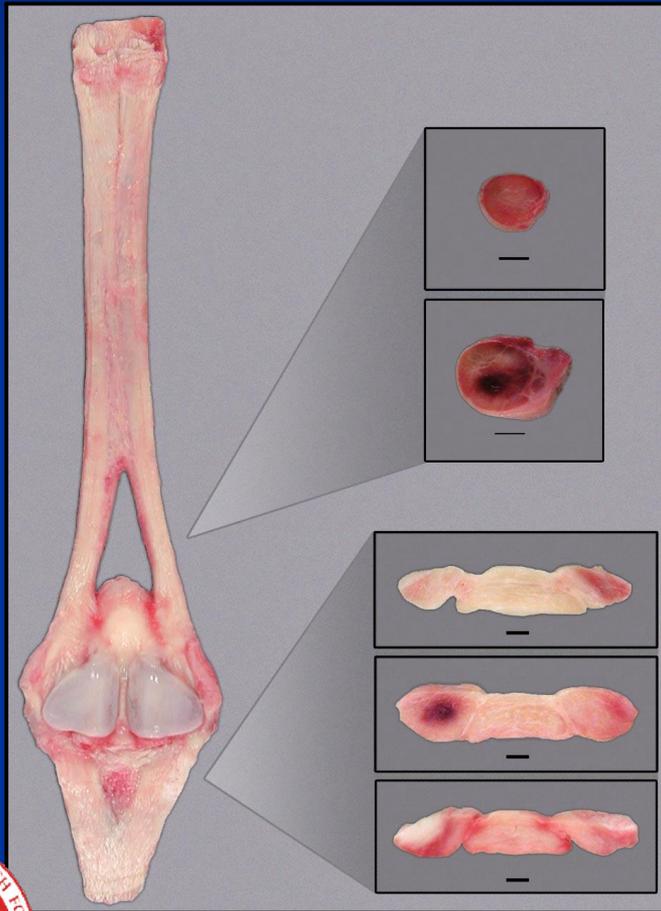
- High toe grabs
- Long toe / under-run heel



Kane, et al. AJVR 1996;57:1147-1152

Balch, et al. AAEP 2002;47:334-338

Mild Suspensory Apparatus Injury Leads to Severe Injury

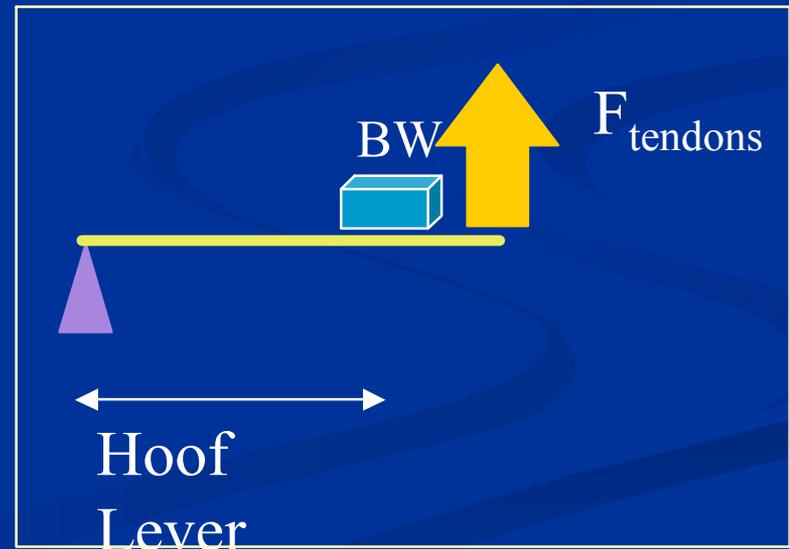
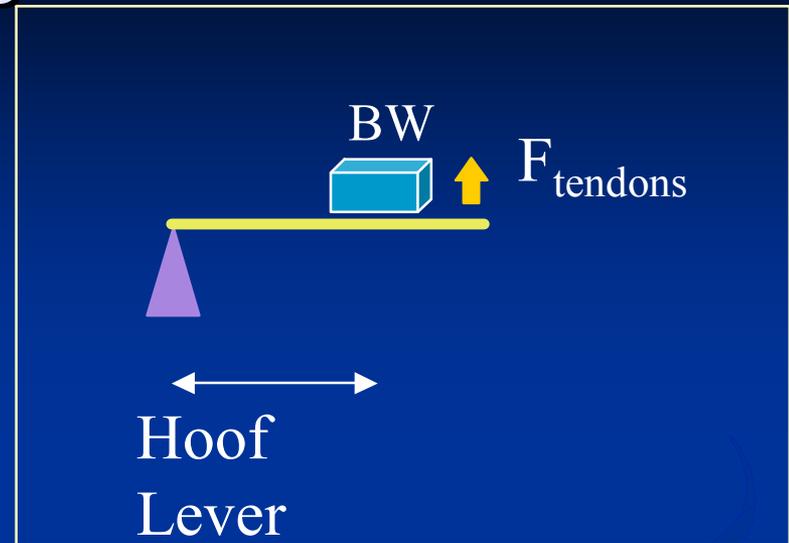


Courtesy of Dr. Sue Stover

Hill, et al. JAVMA 2001;218:1136-1144

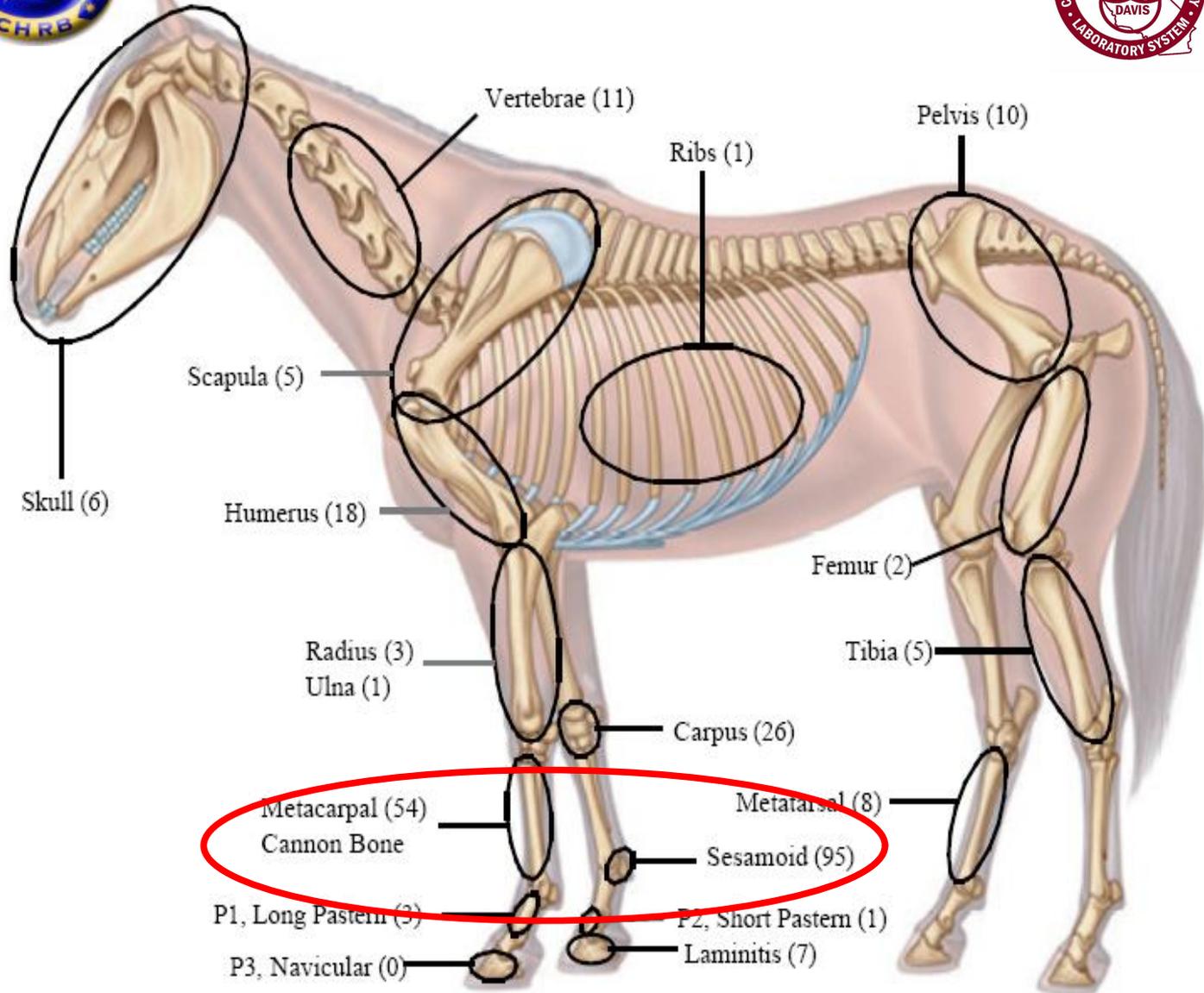


System of Levers





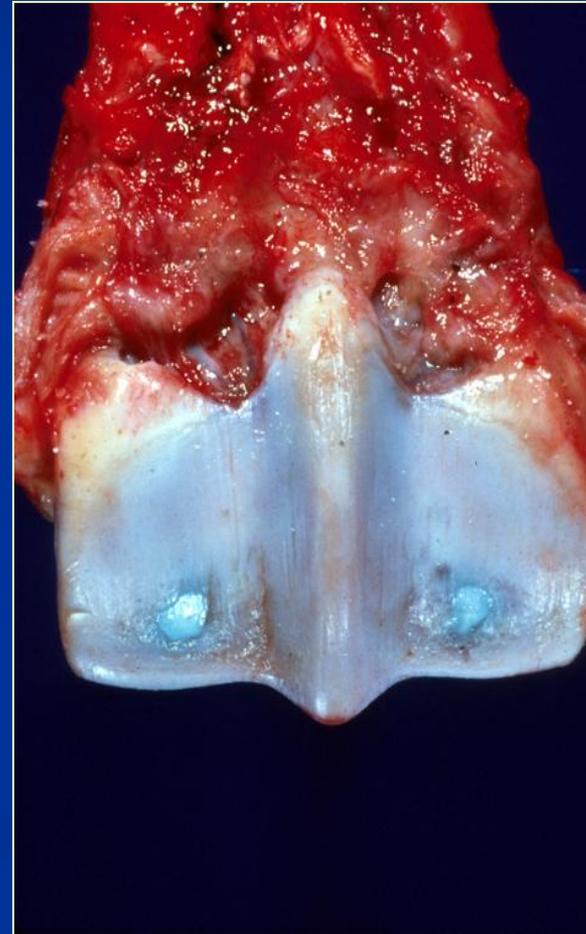
2005

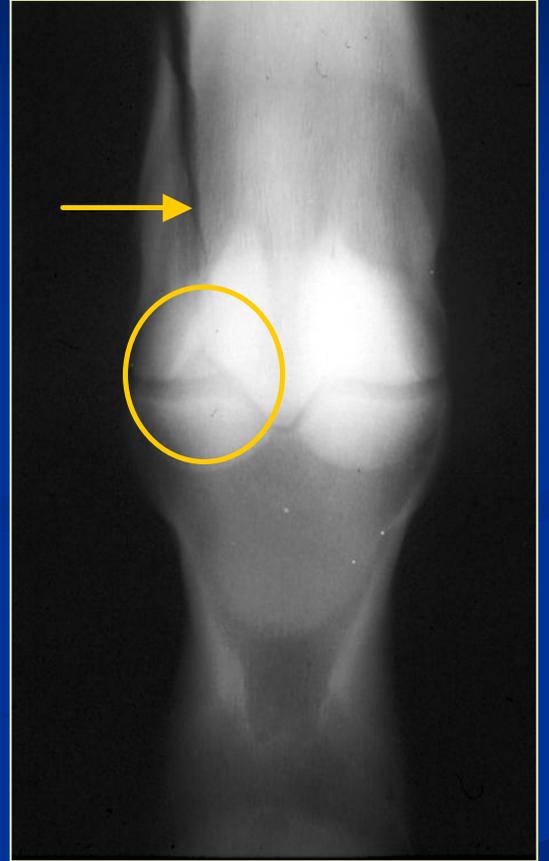


Bone Lesions Precede Arthritis



Condylar Fractures & Traumatic Osteochondrosis



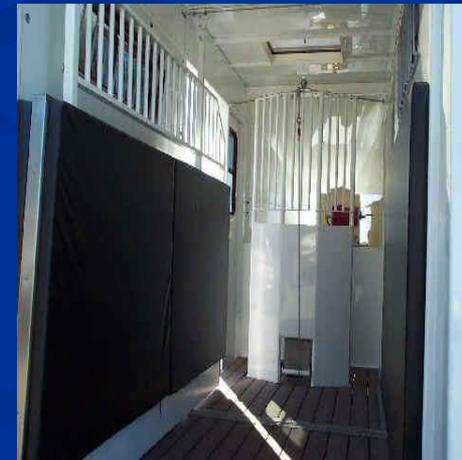


- 90+% of all FMI from the CA necropsy program show some evidence of pre-existing tissue or bone injury

Minimum Standards for Managing On-Track Racing Injuries

- Plan of action
 - Someone must be responsible for developing and implementing a plan for equine racing injuries
 - Everyone must know what needs to be done and who will do what task
 - The necessary emergency equipment readily available
 - Kimzey Splint or other splinting material
 - Emergency drugs
 - Sling or drag mat
 - Other requirements unique to the specific situation
- Adequate Ambulance

Kimzey Horse Ambulance



Kimzey Splint



Welfare Summit and Safety of the Race Horse Summit

Grayson/Jockey Club
Lexington, KY

The detailed Strategic Plan is available at:

www.grayson-jockeyclub.org

RESEARCH

- **Primary Objective: Development of a National Injury Reporting and Surveillance System**
 - **Related Objectives:**
 - Track inventory of horses and personnel, including mandatory micro-chipping
 - Data driven by additional research
 - Housing health and safety issues
 - Continue work and research on therapeutic medications
 - Encourage necropsy programs
 - Economic data modeling of different aspects of the industry

EDUCATION & LICENSING

- **Primary Objective: Institute Education and Exam Requirements for Licensees**
 - **Criteria for Success:**
 - Increased industry awareness of equine scientific studies on horse racing
 - Increased exposure of latest scientific research studies in *Daily Racing Form* and other racing industry trade publications
 - All professional licensing and re-licensing must have annual mandatory continuing education components
 - A database of continuing education components available online for certification purpose
 - Increase horsemanship competency opportunities for grooms through horsemen's groups patterned after such programs as Groom Elite

SHOEING AND RACING SURFACES

- **Primary Objective 1: Attend to the Negative Issues Surrounding Hoof Care**
 - **Related Objectives:**
 - Education of owners and trainers
- **Primary Objective 2: Safer Racing Surfaces throughout the Country**
 - **Related Objectives:**
 - Analysis and data gathering with objective to implement a certification and standardization process for racing surfaces

BREEDING

- **Primary Objective: Encourage Breeding of Horses with Longer Racing Careers**
 - **Related Objectives:**
 - Develop durability statistics and reports for stallions and maternal grandsires
 - Develop a durability index for stallions and maternal grandsires
 - Develop durability statistical sections in racing industry trade publications
 - Develop strategies to reward for durability

RACE CONDITIONS AND RACING OFFICES

- **Primary Objective: To Increase Race Entries**
- **Related Objectives:**
 - More creative condition books
 - Re-examine traditional approach to purse distribution
 - Balance large field sizes with need to create opportunities for a variety of horses
 - Auction races
 - Races for geldings or to boost geldings
 - Balance claiming price to purse level
 - Consider different handicap categories
 - Develop trainer stats that indicate the overall performance (DNFs, average starts per starter, scratches per entry, ROI, average earnings per starter, % stakes winners from stakes performers, etc.)

HEALTH AND MEDICAL RECORDS

- **Primary Objective: To Develop and Maintain a Health, Medical and Injury Record-Keeping System**
 - **Related Objectives:**
 - Correlate repository imaging data
 - Pre- and post-race horse inspection and examination guidelines
 - Medical records database
 - Early diagnosis of orthopedic disease



E. Corbet.

L. Massey

The Broken-down.